



The Philosophy of Failure.

By H. C. SEXTON, D.D.S., Shelbyville, Ind.

I have sometimes thought when reading over the articles which our dental magazines present to us each month that these papers bring before us nothing but an uninterrupted series of successes, and that the failures of practice are seldom recorded. One eminent practitioner after another writes of success after success, and there arises in one's breast a feeling of despondency that he cannot report the same remarkable results from his own experience that these men report. If one could only read of the failures of those men sometimes, how much more human it would all sound, and, in the end, perhaps, be fully as instructive.

From failures many of the greatest successes in life have sprung, indeed all successes that are worth anything at all are built upon a foundation of previous failures. Consequently failure in itself is nothing of which we should feel ashamed, for it does not take very deep thought to see that it is the energetic pushing man who can report most failures. The man who has never attempted anything cannot be said to have failed. It is only the man who tries that can fail. The one who never tries is not a failure; he is a nonentity, or the next thing to one, and nothing can be learned from such a man.

As only the crushing of the rose brings out its sweetest scents, so sorrow brings out in man all his sweetness of soul. As only the sharp blow of the hammer brings the spark from the iron, so adversity and failure brings out in man his perfect character and his true manliness.

It is in the above manner that I love to account for the many failures I have made. There may be some little vanity mixed in with its truth, but, after all, I believe there is no more than the ordinary mortal should be allowed.

In order to enter more fully into the subject I will recount the history of some of my failures. The foregoing should be ample apology for dishing up before the public this potpourri of personal skeletons from my closet.

It first entered my head to study dentistry early one summer, and in order to pass away the time until the opening of the dental college term in the fall, I entered the office of two of the best dentists to be found in our locality. I was not long in gaining experience. The first week I learned to watch the vulcanizer and was quite successful at it, but I am not now writing of successes.

**First Failure
in Practice.**

The second week as I was preparing to lock the office door, being the last to leave, for I had chased my two preceptors from the premises by an unwonted flourishing of the broom over the carpet, a man whom I did not know came bustling up and asked if the dentist was in. I replied that he was not. "Oh, well," he said, "you are his student I suppose, so come in here and pull this tooth. You can do it all right." Now, I doubted that very much, but since he was willing to risk it I felt that I should be willing to try.

I had not yet learned the forceps well. I could tell the uppers from the lowers, for I had so divided them in the drawer, and seeing that the affected tooth was a lower second bicuspid, I picked out a lower forcep at random—it chanced to be a lower molar forcep—and went to work.

The second bicuspid came and with it, to my consternation, came the first bicuspid. The patient did not like that at all and was much out of patience with me, small blame to him! I tried to make amends for the wrong as much as lay in my power, and pushing the first bicuspid back in its socket, I told him I would only charge for the one. When the door closed after him I heaved a sigh of relief. It was my first failure and, as in all others, I learned a lesson from it. From that day to this, a period of thirteen years or so, I have never attempted to extract a lower bicuspid with a lower molar forcep.

**Dentistry from the
View-Point
of a Student.**

At that time I had a very wrong notion of the *raison d'être* of the dental college. I conceived that its office was to grind out diplomas, and in return to squeeze as much money for them out of the student as the student or his parents would stand. The student's only object was to obtain the needed diploma as easily as possible. He should do no more work for the college than he could help—what was the use of his laboring to fill other people's pockets? This is still a very popular idea among students.

I received my diploma without trouble. Such a thing as a man's failing to receive one in those days was almost unheard of provided he was willing to pay for it. I started in practice with the firm conviction that I knew all there was to learn about dentistry, and my future was assured.

Did I not have my diploma hanging on the wall in a most beautiful frame? Were there not eminent dentists' names on it attesting the fact that I had been found proficient in all branches of the profession? Surely those great men knew more about it than the public knew or could hope to know. And then dentistry was such an easy thing, anyway. You had only to drill out a hole, stick the filling material in it, pocket your money and enjoy life. Of course, in some cases, you had to drill some grooves or pits around in odd corners to hold your filling in, but, generally, all you had to do was just to stick it in, trusting the rest to the Lord, and it would stay there. What was there to pull it out? The work was easy; the pay, good. I almost thought the practice of dentistry was too simple for a man of my ability. Should I not have gone into some other profession where there would be more play for my natural talents?

In the height of my vain folly my failures began to come home like chickens to roost, and they came not by ones and twos, but by dozens. Moreover, they were not content to come when I was to be found alone, but would come stamping in and tell the story just at the time when my office had most people in it. Here follows some of the complaints received:

"Doctor, here's this filling out again; that's the third time it's come out in a month. Can't you put a filling in so it will stay? I never had one come out before in my life."

"Doctor, I can't wear these teeth. They don't hit right. The front teeth don't come together by a half an inch, and they fall out every time I open my mouth."

Days, weeks and months go by seeing me struggling for my life with my ever present failures and problems. I hear of patients leaving me in disgust; I hear of a brother dentist indulging in laughter at some of my work; I see former patients eying me suspiciously as I walk along the street, and every time the door opens my heart jumps into my mouth for fear it is a failure come home to roost. If it proves otherwise, I swallow my heart and thank the Lord there is still balm in Gilead.

Then a realization that I know next to nothing of the practice of my profession steals over me. I take my failures seriously to heart and grieve over them, and from that time my progress begins.

Years ago I heard or read somewhere the following incident. A painter of world-wide fame, who was celebrated for the beauty of his productions, was at work in his studio when some curious visitor asked him how he succeeded in so mixing his paints as to make them produce the delicate and perfect shades for which his pictures were noted.

**Brains Essential
to
Success.**

"I mix them with brains, sir," was his rather tart reply. What a world of truth it expressed! He mixed them with brains! And so in this profession of ours it seems to me that we must fill teeth with brains. Once pound that idea into a young dentist's head and he will succeed. Instead of thrusting his failures back in some dark corner and trying to forget about them he will bring them to the front and turn the great searchlight of brains on them. Then his troubles will melt away like snow before the summer's sun, and in their place will spring up the beautiful flowers of hope and contentment.

But my failures have not stopped entirely. As crowds they have ceased to come, but as individuals I still hear from them. And, indeed, I hope they never will stop entirely, for it is an idea of mine that when failure stops, progress also will stop, for progress is only made by surmounting failures.

**Retaining
Patients.**

Whenever a dentist receives a patient in his office and fails to retain that patient in his practice he has made a failure, and should study it. There is a cause, and he should search for it. Of course, he may say that that patient has not enough culture or is too stingy to appreciate and pay for his ability. But the dentist is the only means the patient has of becoming educated up to a high standard in dental matters, and the dentist's office is the best place for the educating. The man who sets a high standard for himself and then trains his patients up to that standard is the man who reaps the largest reward.

Your failures should teach you how to manage people. They should teach you tact, discretion, pleasant manners, and soft words. Without these many a man of good ability is but making a living. Year after year he goes on making the same stupid failures, but never studying them. He had no tact with this person, he was unpleasant to that one; he did not feel like making any explanations to this person, and to that one he made himself objectionable. There are a great many of this kind of dentists. Some of them are well up on the professional ladder, but if they would only study their failures they would be higher.

A dentist friend of mine was once to be away from his home for several months, and he told me that during the interval he had told all his patients to visit Dr. Blank if they were in need of a dentist. "Why, my dear fellow," I said, "don't send them to Dr. Blank. He is utterly incapable of doing good work for them." "That's just it," he answered, "you see they'll all come back to me again when I return."

And so it is with some men. You can count on their incapacity as you would on death and taxes. It is certain, sure, and inevitable. And, odd as it may seem, they are the kind that never have failures, or, at

• least, never recognize them as such. I once heard one of this class say, "I have practiced for ten years and during all that time I have had but seven fillings fail." That was a wonderful record, and it made me feel blue when I thought of the record I had made. Later when I told the story to one who knew the dentist well, it was received with laughter. "What! that man!" he exclaimed. "Why, he hasn't enough sense to know a failure when he sees one."

Some dentists are always making failures when working on one of those nervous, frightened, and withal, foolish patients that are the bane of a dentist's life. From them came many of my failures and some still come, I have found, however, that as long as you control yourself, show sympathy with them, and persevere with your work calmly and surely, you are master of the situation. But if you once lose yourself, if the patient sees that her own irritability has swamped you, then you may as well stop. You are worse than she, for you, whose business it is to surmount just such difficulties, have allowed yourself to be controlled by the foolish patient. A good working rule is: Never allow your own mood to be controlled by the mood of the patient, but by sheer force of will power, rise superior to all anger, irritability or annoyance.

It is a hard rule to live up to at times, but by practice you will gain strength. A failure should be regarded as a personal humiliation and should only stir you on to further effort.

Let us then remember that failure is but the common lot of all mortals, and that the man of merit is only distinguished from the herd by the prompt recognition of his failures, by the studying of them, and by the exerting of his own will power so strenuously that, in the end, he may pass on to other and to better things.

Formalin and Sodium Peroxide in the Treatment of Chronic and Acute Suppuration and Infection of the Pulp.

By DR. THOS. LS. LARSENEUR, Chicago, Ill.

I have found that in many cases of infection, the treatment was rather long and uncertain; in fact, some of these infectious diseases in certain cases are seemingly incurable; nevertheless many were cured after hard work.

What is there more unpleasant for a dentist than to treat a tooth

day after day, and I may even add week after week? After having experimented for the past year with my new method of treating such cases, I can assert that not one has yet failed, although I have handled very serious ones. Here is the manner in which I proceed:

If any vitality is left in the remainder of the pulp, arsenic is applied in the usual way and the patient dismissed for twenty-four hours. At the second sitting, remove the pulp, thoroughly wash out with hydrogen dioxide, H_2O_2 , apply rubber dam; dry thoroughly cavity, pulp chamber and canals, then fill partly with sodium peroxide, saturate a pledget of cotton with formalin, apply the latter in contact with the sodium peroxide; this sets free oxygen and forms formic acid (HCO_2H). The formic acid is a germicide and will destroy all bacteria.

Remove the cotton on which the formalin is applied, and thoroughly dry cavity and canals.

In order to overcome irritation, Black's 1, 2, 3 mix or oil of cassia or eucalyptus should be applied in the cavity. Seal with gutta percha, and paint the gums with aconite and iodine, and dismiss patient for three or four days.

At the next sitting, if any infection, repeat the same process. In most cases, one or two of these treatments will be sufficient to overcome infection.

If no vitality is left in the pulp, and infection and suppuration are present, thoroughly remove foreign substances, wash out with H_2O_2 , and if pulp chamber is not entirely opened, open thoroughly with a drill. A nerve broach or a Donaldson nerve extractor is introduced into the roots, taking great care to remove all the remaining mortified or decomposed pulp. After having again washed out with H_2O_2 , the rubber dam is applied and treatment followed, as above mentioned.

To insure success of operation great care must be taken that all the different canals are thoroughly cleansed. It is also advisable in the cleansing of the canals, to dip the brooch into carbolic acid, which will overcome the pain in certain cases, and also act as a germicide.

In treating an upper tooth, as it is difficult to hold the sodium peroxide in the cavity, I imbed the latter in a little ball of cotton a trifle smaller than the cavity, then holding this with a pair of pliers, or any suitable instrument, apply formalin and proceed as above mentioned.

If application of the rubber dam should be impossible, as in the case of a root, apply napkins and cotton rolls, or cottonoid, taking great care not to allow any formalin to touch the gums or mucous membrane. This may be avoided by not oversaturating the cotton with formalin. The treatment for the upper roots is the same as for the upper teeth.

When rubber dam is applied, be sure there is no leakage.

The sodium peroxide should always be kept free from moisture as, if it is exposed to the air, it will lose the effects it should give in this treatment. When using it, always be sure that the instruments with which it is to be taken are very dry.

Two Styptic Remedies.

By DR. E. WEUNSCHÉ, Berlin, Germany.

For excessive, continuous hemorrhages after extractions or incisions, I would like to call special attention to the fluid extract of *hydrastis canadensis*, twenty to thirty drops to be taken every hour. Usually, the second dose is sufficient to stop vehement bleedings. For many years I have always had some handy, and if necessary I give the first dose myself.

For local treatment, I warmly recommend *penghawar yambi*, called also *penghawar yambee*, or *penghawar djambie*. P. y. is fern wool. It is the capillary developed scales of roots of some kinds of fern, which have in past centuries been used as styptic remedies with the greatest success. The original plant is *cibotium baranez j. sm.* (*aspidium baromez willd.*) The stem of the fern (*habit. Sunda Isl., Indo-China, South China*), is covered densely with yellow filaments about three cm. long. Under the name of *pako kidang* there are in the market somewhat darker filaments of Javanese and tropical American tree ferns, which are also very valuable as styptic remedies. The fern filaments eagerly absorb humidity from the blood, cause quick coagulation of the serum and filling up of the bleeding tissues. Before pressing a tuft of fern filaments into the wound, it is better to crush the filaments in order to bring the thin walled canals of the filaments more extensively in contact with the blood.

The filaments contain tannin, resin and a kind of wax. A plug of *penghawar yambi* pressed into the wound stays bleedings astoundingly quickly, and has the great advantage, in that wounds heal speedily and without any suppuration. For excessive bleedings local application of p. y. is usually sufficient. An incorporation of both above described styptic remedies into the dentist's medicine chest, will afford many a colleague good and quick aid, and I recommend them heartily.

Donations to the Army Medical Museum.

(Continued from page 250, Vol. XXII.)

Since our last report, we have received a number of donations to be deposited in the Army Medical Museum in Washington, which are herewith recorded. We urge our readers to continue this good work, and are pleased to report that the dental department of the museum is growing in interest and scientific importance.

Dr. J. M. Henriquez, of Buenos Aires, Argentine Republic, sends a cast showing a case of hypertrophy of the gum. The patient was a woman enjoying apparently perfect health and having sound teeth. The growth was excised and never returned. (Fig. 96.)

No. 171. Also a cast (Fig. 97) of a peculiar mouth, it being observed that there is a considerable depression in the anterior portion of the jaw. The history of the case is as follows: With the cast, the doctor sends a partial rubber plate, which was worn by a Spanish woman for a period of eighteen years. After five years, the plate became defective, and the patient, who had a terror of the dentist, conceived the idea of placing a thickness of newspaper on the palatal surface of the plate. It seemed to help it remain in position. Gradually she packed more and more layers of paper, until eventually she was obliged to call on Dr. Henriquez for a new plate. The groove in the anterior portion of the plate was so extensive that he found it unnecessary to use any air chambers, and he says that is remarkable what a tight fit was obtained without it.

No. 172. Also a cast showing a supernumerary lateral incisor lying between the lateral and cuspid, the tooth being of very good shape and in no way disfiguring the arch.

No. 173. Also a cast of an exceedingly small mouth, no central incisors being present. These teeth had erupted and were extracted early, and no artificial substitute being worn, the result was that the space closed so that in making a plate eventually there was room for but one tooth. (Fig. 98.)

No. 174. Also sixth-year molar. (Fig. 99.)

No. 175. Also a natural tooth made into a pivot tooth by an Italian dentist in Italy. The tooth did good service for a number of years, but eventually the pivot broke and Dr. Henriquez replaced it with another crown. (Fig. 100.)

No. 176.

- no. 177.** Gemminate central and lateral incisor from the upper jaw of a boy seven years of age. (Fig. 101.)
- no. 178.** Superior wisdom tooth from the mouth of a native (Fig. 102.)

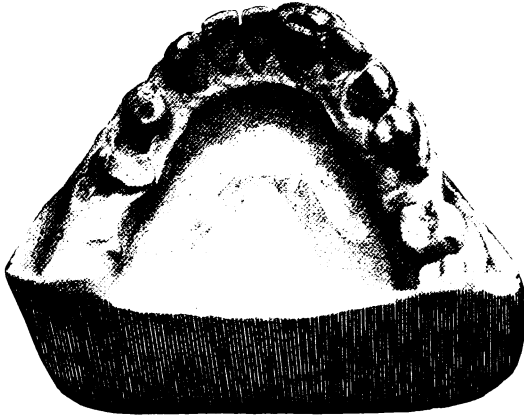


Fig. 96.

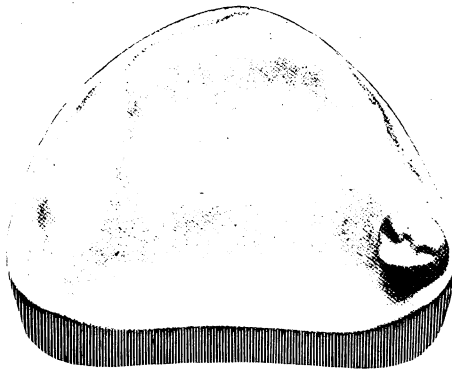


Fig. 97.

- no. 179.** Dr. C. W. Barnes, of Porto Alegre, Brazil, sends a molar containing a soft gold plug, which had been in the mouth for sixty years. The doctor regrets that he could not learn the name of the dentist who inserted the filling, but the tooth was filled in 1836 by a young man who was then at the beginning of his career. The tooth was extracted in 1898.

No. 180.

Dr. N. M. Caima, of Galle Face, Colombo, Ceylon, sends a specimen of native dental prosthesis. (Fig. 103.) He says it is a very rare specimen of this kind, as at present the natives have some crude idea of the use of vulcanite as a base with porcelain teeth instead of blocks of bone and teeth of lower animals.



Fig. 98.

No. 181.

He also sends a specimen of the vulcanite work made by one of the native dentists. This is a lower set and is very crude in construction, the porcelain teeth appearing to be almost as crude as the workmanship of the plate.

No. 182.

Dr. Juan T. Orozco, of San Salvador, Central America, sends a tooth removed from the right nasal fossa of a young woman eighteen years old. The history of the case includes a statement that she suffered from a severe fall when six years of age. (Fig. 104.)



Fig. 99.



Fig. 100.



Fig. 101.



Fig. 102.

No. 183.

Also gemminate temporary central incisors from a boy; the permanent central incisors erupted normal. (Fig. 105.)

Nos. 184, 185.

Figs. 106 and 107 are two out of five supernumerary teeth removed from between the central incisors in the upper jaw of a girl. One was between the teeth, and two at the labial and two at the palatal aspect.

No. 186.

Dr. F. B. Olwin, of Hammond, Ind., donates a left lower cuspid showing two roots.

No. 187.

Also a bicuspid extracted after unsuccessful treatment by three different dentists. The tooth shows considerable corrosion near the apex which reaches into the pulp chamber.



Fig. 103.

No. 188.

Dr. Theo. Sigveland, of Brooklyn, N. Y., sends a model very poorly illustrated. (Fig. 108.) The peculiarities of the case include the fact that there are two supernumerary lateral incisors, and the peculiar formation of the ends of the cuspids and laterals, which brings them within the class known as Hutchinson's teeth. The two laterals have crescentic flaws in the enamel, while the tips of the cuspids show depressions in the center of which is a seedlike nodule of enamel.



Fig. 104.



Fig. 105.



Fig. 106.



Fig. 107.

No. 189.

Dr. Lybrook Shanklin, of Dayton, Wash., sends a superior molar of extraordinary size.

No. 190.

Dr. E. W. Murlless, of Sidney, Neb., sends articulated models of upper jaw showing supernumerary teeth, one lying between the central incisors and one lying behind one of the centrals, which is shown in Fig. 109.

Dr. T. S. Hitchcock, of Oswego, N. Y., sends
Nos. 191, 192, 193. three supernumerary teeth taken from the mouth of a man of twenty-five. One other was present in the mouth, but the patient declined to have it removed.

Two teeth, the names of the donors of which
Nos. 194 and 195. are, unfortunately, unknown to us. Fig. 110 shows
 a central incisor with root almost at right angles.
 Fig. 111, a lower molar having four roots well marked. If the donors
 will kindly communicate, due credit will be given.

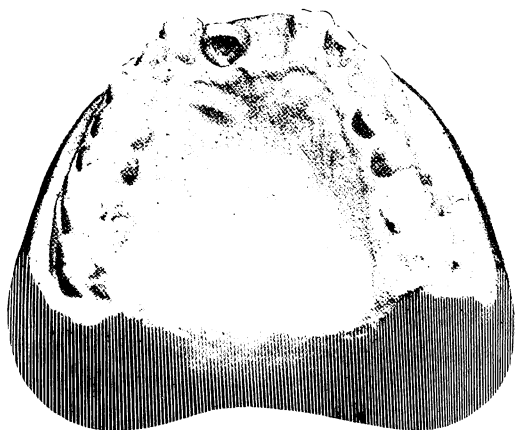


Fig. 108.



Fig. 109.



Fig. 110.



Fig. 111.

No. 196. Dr. C. V. Du Bouchet, of Paris, France, presents practically all of the bones of a skull removed from a prehistoric sepulchre of the age of polished stone, found at Bovillon de Vichel, near Neuilly St. Front (Department Aisne), France. Discovered November 25, 1877, by the Count des Cars.

Also specimens of modern hippopotamus carving. Fig. 112 shows a partial upper plate. The teeth at the sides are carved from the ivory, those at one side made more serviceable by gold nails inserted for purposes of mastication. The four front teeth are made of porcelain, which are backed with gold and attached to a gold plate of the shape indicated by the line shown in the figure. The gold plate is placed on the palatal surface, however, and is attached to the ivory with gold rivets, the heads of which can be seen in the illustration.

No. 198. Fig. 113 shows an upper and under set, in which the plates are made of silver and the teeth carved from the ivory, and then attached to the plates by riveting. It is evident they were held in the mouth with springs, which are now absent.

No. 199. Fig. 114 is a partial lower piece carved from the ivory, which was held in place by ingenious devices. On the left side will be seen a clasp made of spring gold wire, which is fastened into position by passing a long distance



Fig. 112.

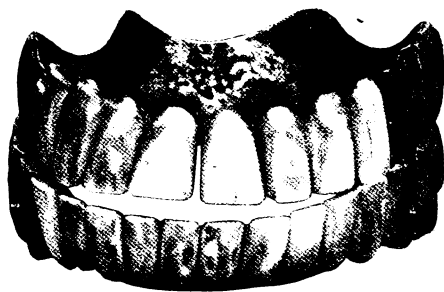


Fig. 113.

through a hole drilled in the plate coming out on the masticating surface of one of the molars, where it is turned and riveted in. The clasp on the opposite side is carved from the ivory, and the indications seem to be that the middle clasp is a device which has been resorted to after the fracture of a similar clasp on the other side, which it is thus made to take the place of. Further stability is obtained in both instances by drilling holes in the plate and inserting wooden plugs, one of which can be seen protruding from the side of the bicuspid on the right side of the plate.

No. 200. Dr. W. H. Steeves, of Frederickton, New Brunswick, donates articulated models of a very small mouth. The models represent the mouth of Prince Tinymite. The Doctor had no impression tray small enough with which to take this, and made a tray out of a corner of a blacking box. The models were made in 1892. The patient has subsequently died. The Doctor also sends the ingeniously constructed little impression tray.

No. 201. Dr. A. G. Smith, of Yokohama, Japan, donates a model of an upper jaw showing a bony tumor along the median line.



Fig. 114.

No. 202. Dr. T. C. Triggert, of St. Thomas, Ont., Can., sends a cast showing an anomaly of second dentition. The supernumerary tooth, which is almost a perfect bicuspid in shape, though diminutive in size, is lying at the palatal side between the second bicuspid and first molar.

No. 203. Dr. F. E. Buck, of Jacksonville, Fla., sends models showing a new method of making an open-faced crown.

No. 204. Dr. H. W. Parsons, of Wamego, Kan., donates a cast of an upper jaw, in which there are two lateral incisors on the right side.



Soldering in its Application to Crown and Bridge Work.*

By HART J. GOSLEE, D.D.S., Chicago, Ill.

III.

Essential Requirements: Cleanliness; Acid Bath. Flux; Borax; Method of Using. Parr's Fluxed Wax, Liquid Soldering Fluids. Apposition; Requirements and Method of Obtaining. Uniform Heat; Application and Requirements. Difficulties Encountered: "Balling Up," Shrinkage. Base Metals. Gravity, Fracturing Porcelain Facings, Soldering Block Teeth. Manipulation: Soldering Without Investment. Flame Blow-pipes. Soldering With Investment. Gold Soldering. Pure Gold Soldering. Platinum Soldering. Oxy-Hydrogen Blow-pipe. Cooling After Soldering. To Prevent Unsoldering. Sweating Process. Autogenous Soldering. Soft Soldering.

In its application to dentistry soldering has rapidly assumed the significance of an *art* of much greater importance than ever attained by those presupposed past masters—the gold and silversmiths. This is readily proven by the ease with which the process is now executed in the consecutive union of a multiplicity of parts and the building or restoration of contour, as compared with the work along similar lines confined to their province.

The ease and dexterity with which such results may now be obtained by the more skilful, however, compared with the expressions of doubt and even dread manifested by others, followed by such discouraging failures as the burning or fusing of the parts, or the fracturing of porcelain facings, leads to the very natural conclusion that in such instances the lesson has not been properly learned, and that the subject merits and demands more thoughtful consideration and study, and more persevering application than is usually accorded.

To this end the dentist cannot too closely apply himself in the effort to become sufficiently skilled as to render the procedure one of simplicity and ease, together with reducing to a minimum, or eliminating, all attending dangers of and liability to, accident, which in this, the physical process of uniting surfaces of metal by fusion or superficial alloying, will invariably follow a comprehensive knowledge of the fundamental requirements, and a close observation of all of the essentials concomitant with success.

Essential Requirements.

These important considerations are cleanliness, flux, apposition, and uniform heat, and unless clearly understood from a practical standpoint, the process involved, while perhaps sometimes successfully accomplished, is necessarily followed in a more or less perfunctory manner, in which case the operator becomes simply an automaton.

Cleanliness. The thorough removal of all oxidation and deposits of foreign nature from the surfaces to be united is highly necessary in order that the solder may become thoroughly alloyed or incorporated, so that the element of strength may be insured in the union. This may be secured by scraping or filing the surfaces, or by treating them with an acid solution.

Acid Bath. For this purpose sulphuric or hydrochloric acid, diluted with an equal proportion of water, is used, into which the parts are immersed for a few moments to dissolve and remove all foreign substances.

Sand Bath. Sulphuric acid is preferable, and for large work should be contained in a porcelain evaporating dish of proper dimensions, as heat materially increases its cleansing properties. The dish should then be placed in a shallow sheet iron bowl partially filled with sand and placed upon a tripod over an alcohol or Bunsen flame, by which means the parts may be boiled, if necessary. As the fumes thus given off are more or less injurious when inhaled, some provision must be made for carrying them away, which

may be quite easily accomplished by attaching a hood to a gas pipe and permitting the latter to pass through a hole in the window at some accessible point (Fig. 17).

For small work a much more convenient method is to freshly mix the solution each time by *pouring into* a small amount of acid an equal proportion of warm water, when the chemical reaction will generate heat enough to thoroughly clean the parts, after which it may be thrown out.

For metal work only, where no porcelain is used, this solution may be saved by placing it in a large-mouthed bottle and used indefinitely and effectively when cold by first heating the parts to be cleaned and then plunging them into the acid.

After removing the work from the bath, it must always be thoroughly washed in clean water to so dilute the acid as to remove all traces

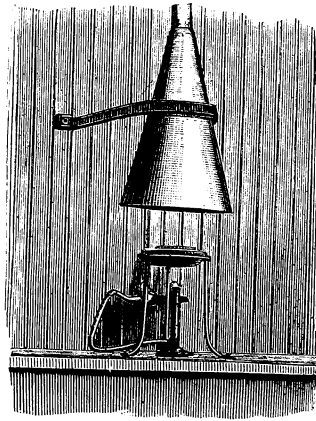


Fig. 17.

of it before heating in the flame, because if this is not carefully done, and any traces of acid should remain, the formation of the salts of the baser metals which is facilitated by the heat will at once preclude the possibility of soldering until again treated with acid and this precaution observed.

Flux.

As the affinity for absorbing oxygen from the atmosphere, which nearly all metals possess, is increased by heat, the application of it incident to the process of soldering causes the exposed surfaces to become rapidly oxidized, in consequence of which it is necessary to preclude the possibility of such tendency and preserve the cleanliness of the parts in

order that the solder may not be prevented from readily fusing and becoming alloyed.

Substances are used for this purpose which, when fused over such surfaces keep them clean and free of oxidization, and aid in the fusing and alloying. It is equally necessary that the solder as well as the surfaces of metal be thus treated, because, being a lower grade alloy, it is more easily oxidized. When not so treated the neglect may not infrequently be the cause of much obstinacy in fusing, demanding a greater degree of heat than otherwise necessary.

Borax is most generally used for this purpose and meets the requirements in every respect, but the common practice of using it in dry powdered form, in far greater quantities than necessary, is to be most vigorously condemned, because when first heated it expands to such extent as to not

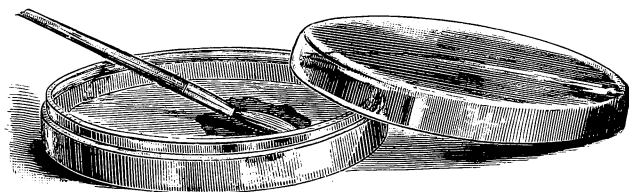


Fig. 18.

infrequently split the investment and change the relation of the parts; may even flake or deface the porcelain if it should come in contact with it by fusing upon it; always displaces the solder, and usually results in the presentation of a pitted surface.

To prevent this and secure the best results, it should be mixed with clean water to the consistency of a thin paste, and applied with a small camel's hair brush, which admits of its application to the particular surfaces in the proper and necessary quantity.

Owing to the tendency to crystallize, however, it is difficult to preserve such consistency, but this may be facilitated by preparing and keeping it in a glass-covered dish, where it may be also kept clean and free from dirt, which is eminently desirable. (Fig. 18.)

This is a hard wax, containing an admixture of **Parr's Fluxed Wax.** borax, which is much used, and is a convenient form of flux, as the wax burns out, leaving the borax deposited upon the surfaces in small proportions.

**Liquid
Soldering Fluid.**

Liquid soldering fluid is now being extensively used in dentistry, and has been by jewelers for a number of years. It is the best, cleanest, most desirable and convenient flux for our purpose. It is a saturated solution of equal parts of borax and boric acid in water, and can be more easily and readily applied with a camel's hair brush or small piece of wood in proper quantity to a better advantage than any other.

In *all* instances, however, the flux should be applied before heating the object to be soldered, in order that it may be placed in or carried to every portion and surface of the metal upon which the solder should flow in securing union, which is not always possible if applied to the heated case.

Apposition.

To facilitate the union between the parts, the edges or surfaces should always be in absolute contact, or as nearly so as possible, so that there may be strength in the joint, and no impediment offered to the solder in flowing freely over the surfaces to be united.

In case the proper relation necessary to be sustained will not admit of contact, it should then be secured by filling in between such edges or surfaces, thus bridging them over with small pieces of the metal of which the work is being constructed. This is usually best accomplished with gold or platinum wire or plate, or some of the foil or crystal golds, the latter being preferable because of their thickness, which should be fitted or packed into place before the case is heated.

Uniform Heat.

The application and proper manipulation of heat in securing the best results is an important feature, but because of the under-valuation or over-estimation of the requirements is frequently the means of much discouraging and unnecessary labor, yet when properly applied with the former prerequisites observed, the entire procedure is infinitely simple.

In this connection it must be remembered that, as the process constitutes the alloying of the parts, the surfaces to be united *must be freely exposed*, and then brought to a degree of heat exceeding, or at least *equal to, the fusing point of the solder before union can obtain.*

Difficulties Encountered.

If this degree of uniformity is not scrupulously observed, and the heat be directed upon the solder before the parts are equally and sufficiently heated to permit of alloying, the aggravating annoyance of "balling up" is invariably the result.

This tendency of the solder to assume globular form with more or less obstinate persistency is due only to the difference between the size of the object to be soldered and the relative degree of heat required by it, as compared with the small quantity of solder used and its consequently greater fusibility. If much time be thus consumed the baser alloy contained in the latter may be burned out, the loss or depletion of which will increase the fusibility and decrease the flowing properties to such extent, perhaps, as not infrequently to cause the melting of the parts.

As this is obvious, and since the affinity of one metal for combining with another is increased by heat, it is only necessary to first raise the temperature of the higher fusing parts equal or near to the melting point of the most fusible, when very little further heat well directed upon both simultaneously will result in perfect union with little or no effort, and as the *solder will follow the heat* or flow in the direction of the greatest degree of temperature, it can be controlled accordingly.

As the shrinkage of solder increases in proportion to the quantity of baser alloy incorporated, and manifests itself to such an appreciable extent in gold work, it is imperative to use the utmost precautions toward preventing the possible change in the relation of the parts which might thus ensue, and which may not infrequently result in jeopardizing the fit and adaptation.

To preclude this possibility it is necessary to observe the requirements of apposition and contact very closely, and in more or less extensive work it may be further prevented by soldering each piece separately first, so that in the final assemblage of the parts as little solder may be used and carried to the fluid state as is immediately required to secure union and strength. Thus very large cases should be soldered in sections and afterward united.

Perhaps paramount among the difficulties most frequently experienced is the checking or fracturing of porcelain facings, but this, while seemingly and apparently unavoidable, is in nearly all instances due to the most flagrant *negligence*, in so far as soldering is concerned.

In this connection it is necessary to consider the fact that a porce-

lain facing constitutes and presents two distinct substances, the mineral and the metal—the porcelain and the pins—each of which possesses physical properties which are affected very differently by the heat to which they are subjected.

The mineral, absorbing heat very slowly and gradually, retains it for a considerable length of time, while the metal absorbs it readily, and gives it off or cools with equal rapidity; consequently, in the process of soldering, the utmost care must be exercised in applying the heat so gradually and uniformly from the very outset that the porcelain, which is a friable material, will receive it either preceding or at heat simultaneously with the platinum pins, in order that the expansion which takes place in each may occur evenly and uniformly. It is invariably this *uneven expansion*, wherein that of the porcelain is not sufficient to accommodate that of the pins, which causes the fractures occurring across the surface of the facing, always radiating from the pins. To various other reasons, however, may sometimes be attributed this difficulty, but the percentage is very small as compared with that of uneven expansion.

Such other cases may be from *impingement* due to the shrinkage of the solder and augmented by too close proximity of parts with each other to accommodate this shrinkage; from overhanging edges of backings, which in contracting necessarily impinge upon the edges of the facings, causing innumerable small checks along such edges; to perforating the backings with openings much too large for the reception of the pins, thus permitting the solder to run in between backing and facing; or to carelessness in bending the pins (to retain the backings), in such manner as to produce a constant strain on the porcelain immediately surrounding their attachment. As a proof that it is either uneven expansion or faulty adaptation of the backing, it is noticeable that facings seldom if ever check in porcelain work where they are subjected to even a much higher degree of heat.

Soldering Block Teeth.	Where there has been extensive resorption of tissue it will sometimes be desirable to use what are known as gum blocks. Because of the curve of these blocks there would be more or less liability of fracture, even in skilful hands were a single backing to
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be used for the whole block. By a very simple method, however, blocks of three and even four or more teeth may be safely utilized, thus avoiding the unsightliness and uncleanliness of joints which would result from using single gum teeth. This absence of joints is especially desirable when restoring the anterior upper teeth, and in replacing the four incisors a most artistic result may often be attained with a single gum block. In using these blocks each tooth in the block should be backed

separately, the backings being so placed that they would not absolutely touch. In adapting the blocks to the piece to which they are to be attached, care should be employed to so fit them that the minimum of solder will be required to effect union. There will be no danger of cracking the block during this last procedure, because the base to which attachment is made should afford ample resistance to the slight shrinkage of the solder at the bases of the separate backings.

Another not unusual occurrence during the
Base Metals. process of soldering is the appearance of small holes or perforations on the surface of the metal. These are usually due to the presence of some of the baser metals, which may become attached by contact with the dies in swaging; from a file containing same, or from the work bench, and can only be avoided by always carefully treating the piece to an acid bath immediately *preceding* each application of heat.

In extensive work it is always desirable to
Gravity. observe the laws of gravity as much as possible, for while it is true that the solder will follow the heat, and its flowing may be so controlled in a measure, when used in considerable proportion its weight will naturally cause it to seek the lowest point; hence it frequently becomes necessary, especially in large cases for the anterior part of the mouth, where the curvature is greater, to change the position of the case as the soldering progresses in order to retain the mass in the desired location when in the fluid state.

Manipulation.

Closely following a consideration of the requirements and difficulties encountered in this work is the importance of practical manipulation in its various phases, the proper execution of which renders the procedure easy and simple.

In soldering bands, caps, and cusps, where no
Soldering investment is necessary to sustain the relation of the
Without Investment. parts, the work is more easily accomplished because of the greater opportunities for securing uniformity of heat, and can usually be done in the flame of an alcohol lamp or Bunsen burner with ease; but the manner of holding the object in the flame, and the material of which the instruments for the purpose are made bear materially upon the dexterity and simplicity with which the procedure may be accomplished.

Flame.

As different parts of the flame vary in the degree of intensity of heat, it is of importance that the object be held in a proper relation to the same in order that the soldering may be more easily accomplished. The flame consists of an outer sheath varying in color from a dark blue at the base to a yellowish white at the point, which envelops a central cone of light bluish color, at the summit of which the greatest degree of heat is present (Fig. 19).

Fine-pointed pliers should invariably be used and the object should be held at a point as remote from the surface to be soldered as possible, so that the pliers will not absorb the heat. Because of this tendency,

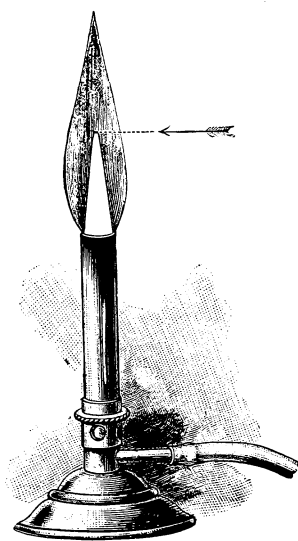
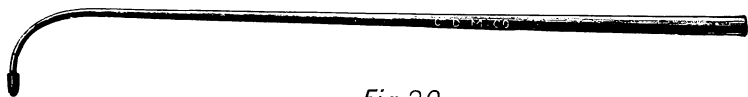
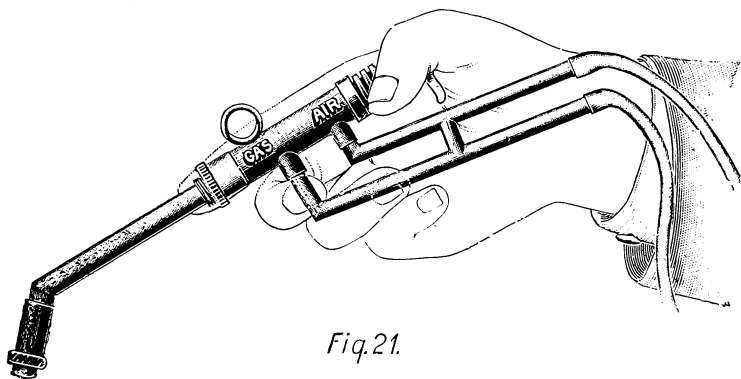
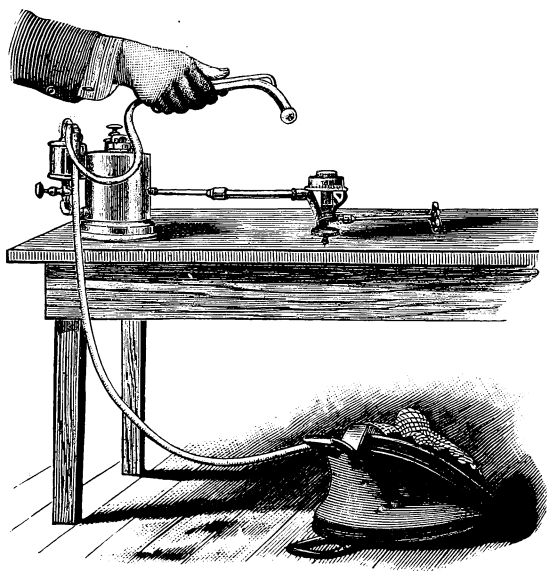


Fig. 19.

steel instruments should seldom be used, while those made of nickel, or its alloy, or of steel with fine platinum points answer the purpose much better because they absorb so little heat that they may be held comfortably in the hand.

In soldering platinum with pure gold the use of flux is not imperative, for the reason that both metals are pure and devoid of alloy, which greatly diminishes their susceptibility to oxidation, and the ordinary mouth blowpipe (Fig. 20) is all that is necessary; while platinum solder up to twenty-five per cent. can be successfully used with the "combination" blowpipe and bellows (or compressed air) (Fig. 21), or may be equally well done with the gasoline blowpipe, a successful and convenient

*Fig. 20.**Fig. 21.**Fig. 22.*

style of which includes a burner and is illustrated in Fig. 22, manufactured by Dr. R. C. Brophy, of Chicago, Ill., or small pieces of platinum work where the contact and relation can be sustained by proper adjustment, and where no investment is necessary, can very often be soldered in the electric furnace with much convenience.

Where the case is necessarily invested the
Soldering process is usually considered as a somewhat more
With Investment. difficult and arduous task, which for very good reasons it unfortunately often proves to be the principal one of which is a failure to properly and adequately heat the entire case *before attempting to solder.*

It should first always be placed upon a Bunsen or gasoline burner and allowed to remain sufficiently long to become gradually and thoroughly heated, which may be hastened, if necessary, by applying and directing the heat with the "brush" flame from the blowpipe, to the under surface in conjunction with the burner. Then, when it shall have reached a temperature indicated by a red heat, the solder should be consecutively applied in *fairly good sized pieces*, which, with the burner from beneath to preserve a uniform heat, and a "pointed" flame from the blowpipe then directed upon the parts, will easily and quickly accomplish the object sought without useless expenditure of effort or energy.

The fusing and flowing of the solder in the
Gold Soldering. desired location and direction may occasionally be facilitated by the use of a fine pointed steel instrument when in the partially fused or plastic state, after which only heat sufficient to solidify the mass until a smooth surface obtains should be applied.

In fusing gold solder of any grade the requirements in the degree of heat so far as the blowpipe itself is concerned are generally greatly over-estimated; if the case is first properly heated, the combination blowpipe controlled by the mouth easily furnishes all that is necessary, and is preferable and safer, as the danger attending the burning of the parts is always increased by the use of the bellows, because the control is not so perfect.

To blow a continuous flame with the mouth blowpipe is a valuable accomplishment and can be acquired with practice by nearly any one.

In platinum work, where the danger of burning
Pure is eliminated, and the requirements of heat are
Gold Soldering. increased by the use of pure gold as solder, the bellows will, of course, be found convenient and useful, though even then the skilful manipulation of the mouth blowpipe will accomplish the work. However it may be obtained, heat enough to

thoroughly fuse the gold until it becomes alloyed with the platinum, so as to occupy no apparent space except that in the immediate joint, is absolutely essential to successful results in this work.

**Platinum
Soldering.**

In small cases where a large investment is not indicated, platinum solders up to twenty-five per cent. may be fused with the bellows or compressed air, but the necessary degree of heat to thoroughly and easily fuse them can, of course, be best obtained from the oxy-hydrogen flame, which is indicated always in extensive work.

**Oxy-Hydrogen
Blowpipe.**

The use of an oxy-hydrogen blowpipe is regarded by many as being somewhat complex and expensive, but is in reality most simple and comparatively inexpensive. In manipulating one the illuminating gas should be turned on first and ignited, and then the nitrous oxide valve opened very slowly and gradually, until perfect combustion is obtained.

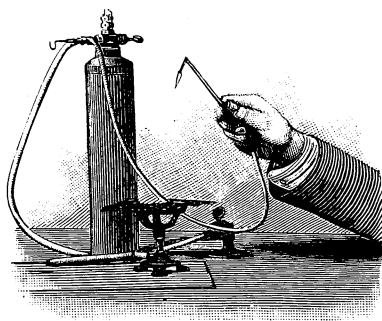


Fig. 23.

The case should be first thoroughly heated with the *brush* part of the flame, after which it is necessary to bring the point of the central *cone* in contact with the surfaces to be united, as this is the heat-producing portion. The soldering may be then accomplished with ease.

The extreme heat and incandescence, however, is very hard on the eyes, and a pair of smoked glasses will be found most conducive to success and comfort. Fig. 23 illustrates a simple and inexpensive apparatus for this work, manufactured by L. J. Mason & Co., of Chicago, Illinois.

**Cooling After
Soldering.**

When the soldering has been completed, the case should remain over the flame for a few moments to prevent too rapid cooling and the consequent sudden contraction or shrinkage, after which the flame may be turned off and the case allowed to stand until cool enough

to handle, when it may be then removed from the investment, cleaned in acid, and finished.

To Prevent Unsoldering. In cases where an investment is not indicated it is frequently desirable to observe some precautions to avoid the unsoldering or re-fusing of parts previously united, which is usually accomplished by

the mere presence of the investment itself when such is used. This may always be very easily prevented by coating or treating such surfaces with crocus (ferric hydrate), or a liquid solution of plumbago, or whiting in water or alcohol.

Sweating Process. The not infrequent occurrence or presence of small perforations in the surface of the work makes it often necessary to resort to some means of filling them in, which is best accomplished usually by what is known as the sweating process, which simply implies bridging them over with solder.

This may apply to cases requiring investment or not, and the procedure in either instance indicated is to first thoroughly clean the parts and then fit or burnish into the opening a piece of pure gold plate or foil of suitable dimensions, which may be held in place by holding the work in a favorable position to sustain it, or attaching it by the fusion of the flux. A piece of solder somewhat larger than the perforation should then be placed in position, covering same, and likewise held in place, and then heat uniformly applied until the solder becomes firmly attached without complete fusion. In small perforations solder alone will accomplish this end, without the use of a support of pure gold or other metal.

Autogenous Soldering. Autogenous soldering is the process of uniting surfaces by immediate inter-fusion, without the use of a lower grade alloy, and while it has no decided advantages, excepting that a joint so made is not increased in stiffness or thickness, and the appearance of a seam of solder is avoided, it is quite easily accomplished in uniting bands and attaching solid cusps to them, in the execution of which the surfaces must be *perfectly* approximated, retained closely in contact, properly fluxed, and held in the flame until union is accomplished by superficial fusion. By a little practice one may become quite skilful, and joints so made usually possess every element of strength.

Soft Soldering. While soft soldering is not to be generally commended, it is sometimes indicated in emergency cases, where some strength in the union of the parts is required, such as temporary crowns, etc. For such purposes a solder composed of equal parts of tin and lead, or any of the fusible alloys, may

be used, either with a soldering iron or by placing them upon an asbestos pad and directing the flame of the burner upon them until the solder fuses. A convenient flux for this work is made by gradually adding pure zinc to hydrochloric acid until the chemical action subsides or the acid refuses to take up more, thus making a solution of zinc chloride, when it may be filtered and is ready for use.





Complimentary Dinner to Dr. S. B. Palmer, of Syracuse, N. Y.

A complimentary dinner, under the auspices of the Fifth District Dental Society, was tendered to Dr. S. B. Palmer, of Syracuse, on the evening of April 15th, 1901, in commemoration of his fifty-two years of successful practice, and in appreciation of his accurate scientific work, his faithful character and prominent, influential position occupied in the dental profession.

About seventy-five men, from various parts of the state, gathered to do honor to Dr. Palmer, and an elaborate repast was served. The menus were exceedingly tasteful, the covers being in hand-painted designs, each carrying the name of the special guest for which it was intended.

The tables were decorated with broad bands of pink ribbon, on which were placed potted pink hyacinths and azaleas, while an orchestra furnished appropriate music.

An interesting incident of the occasion was the presentation of a loving cup by Dr. T. S. Hitchcock to Dr. Palmer, a copy of which is seen in the illustration. Dr. Hitchcock, twenty-five years ago, was associated in business with Dr. Palmer. The cup is an excellent piece of work of his own hands, being carved from wood and horn.

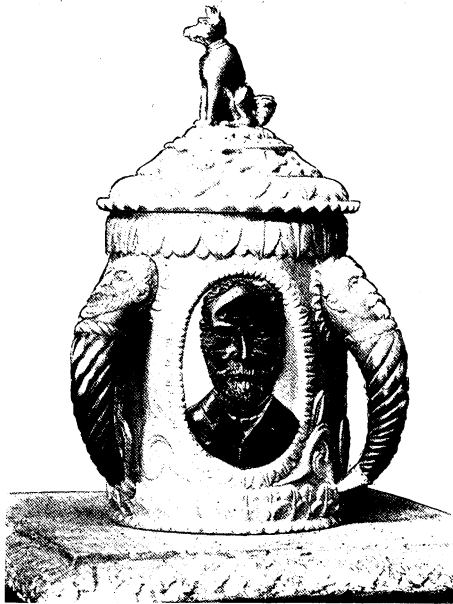
The toastmaster was Dr. Ira C. Curtis, the toasts and responses being as follows:

"To Be or Not to Be".....Dr. Frank French, Rochester
"Relation of Dentistry to Medicine".....Dr. H. D. Didama, Syracuse
"A Twentieth Century Prophet".....Dr. W. C. Barrett, Buffalo
"The Press".....Hon. Carroll E. Smith, Syracuse
"The Pleasure of Service".....Dr. Frank Darby, Elmira
"Closer Ties".....Dr. J. Foster Flagg, Philadelphia
"Every Attainment Is Only a Camp for the Night,
Dr. R. Ottolengui, New York
"Response".....Dr. S. B. Palmer, Syracuse

Dr. Frank French delivered a short address in response to his subject, which seemed worthy of being preserved, and is hereby appended.

**Dr. Frank French,
Rochester, N. Y.**

Now it came to pass in the fifth year of the reign of McKinley, Odell at that time being Governor of the Empire State, and Tom Platt Tetrarch of Gotham, that the members of the tribe of Dahntees who dwelt in and around the Salt City, gathered themselves together at the council house. This is the same city where Lot's wife was



turned into a pillar of salt, the place whereof is shown to the sceptical until this very day. And notwithstanding her punishment for looking behind her, the ladies here still keep up the custom.

After much meditation one of them said: "My friends, we are a greater people than we thought, for we have a greater man with us than we wot of, and the fame of his learning hath extended even unto foreign lands. He has studied much. He has written so much that if all were printed, I suppose all the books of the world would not contain it. Truly he hath met with opposition, but hath ever shown a bold front, always having the courage of his convictions. When the law was passed that all Dahntees should go to Albany, which is the city of laws, and where the chiefs dwell, to be examined, Stewart B. Palmer was the first

one to go before the examining board for the degree of M. D. S., and of a truth he has honored the degree. Three years later, in 1872, he was elected to the office of examiner in place of Dr. Amos Westcott, which place he hath filled to these twenty and nine years. On the death of President Southwick, of precious memory, he was elected to fill his place, and hath been president of the examining board since June, 1898. In all these years we have never so much as given him a calf to make merry with his friends, though calves are plentiful and cheap. Now to prove that we wish to show him all honor and respect, I move that we give him a grand feast; a feast of fat things; of wine on the lees, of wine well refined. And we will invite all his friends to come and make merry with him. And the elders who were assembled in the council chamber said: "It is well. Your words savor strongly of wisdom and forethought. We will even do as you have suggested."

So they sent messengers, swift messengers to the east, north, west and south, bidding them to gather together for the great feast to be given in honor of Dr. Palmer. And the people came from every direction so eager were they to greet him, until there was no more room in the Salt City, and those who could not get in were saved as by salt.

Now when the hour of the feast drew nigh, they took Dr. Palmer, clothed him in purple and fine linen, and seated him at the head of the table amidst his friends. Time would fail to tell the number of his friends and wise men who were gathered together to greet and do him honor. They came from the great city of Gotham, from beyond the Great Lakes and from the lawgivers' Mecca—Washington. All were anxious to sound the praises of Dr. Palmer, notwithstanding he had more than once beaten them at a little game which he did not much understand.

Among those who were to address the great multitudes was one Ottolengui, which, being interpreted, meaneth many tongues or great speaker; for he came from the great city of Gotham, where he is known for his much speaking. Also one William, whose surname was Barrett, who came from the city at the foot of the Great Lakes, where only a short time since the bear and wolf roamed unmolested, and the gray fox leaped from hill to hill and from valley to valley with his majestic tail behind him; but the Buffalo still remains, and will be very prominent during the Pan-American. This same Barrett was also a great slinger of words, and had come hither to show his respect for his life-long friend, Dr. Palmer. Then there was one Frank, whose surname was Darby. He was a funny Kuss, and greatly amused the people. And one Didama, a genuine sawbones, who was well known. Also one Smith, who caroled so sweetly (through the daily papers) that all who heard him said please

"Carroll, some more." Also the man who carried the Flagg of the new departure at the head of his regiment with Dr. Palmer, keeping step at his side.

Dr. Palmer saw all these, his friends, around him. He saw warm affection for him beaming in every eye, and rising from his seat he said in a tremulous voice, "My friends, is it better 'to be, or not to be,' " and with one voice the multitude said it is better "to be."

The following letter from Dr. Flagg was read by the toastmaster.

To the Members of the Fifth District Dental
Letter from Society of the State of New York, Greeting, from J.
Dr. J. Foster Flagg. Foster Flagg:

Regretting that I cannot be with you upon this occasion so gratifying to the admirers of our friend, Dr. Palmer, I have thought it would be interesting to fill for you a great vacancy which occurs at page 95 of the Transactions of the American Dental Association for 1875, and which makes the remarks of Dr. Daboll, the antecedent to the "passing" of the subject of dental chemistry.

It was upon that occasion, at the close of his remarks, that, for a moment, the peculiar silence occurred which is recognized as indicative of cessation of discussion, and the president had said: "If there are no others who desire to speak, a motion to pass the subject will be in order."

I was full to overflowing. It was during the remarks of Dr. Palmer and the discussion which followed, that I learned what I was at that meeting for.

I had been sent as a delegate from the Pennsylvania Odontographic Society, and if I had any special object for being there, I supposed it was to speak for the retention of the "D. D. S.," as the degree which was then, and is now, the distinctive degree of that which I have always regarded as a profession—dentistry—but, as Dr. Palmer spoke, a cloud of fifteen years' duration seemed to roll away from my professional sky, and all that had been curiously dark and bewildering became so clear and bright that for a time I was both overjoyed and dazed.

Since 1860 I had been engaged in filling all kinds of teeth with all kinds of "filling materials" and making carefully tabulated statistics of my results, and while these were such as gave much satisfaction to my patients and to myself, I yet had no reason for the doing other than that the tables showed success on the one hand and failure on the other.

Our range of filling materials was the same then (forty years ago) as now—gold, tin, amalgams, gutta percha, and, occasionally, a porcelain inlay, and the results of my statistics had already separated such teeth as seemed indicated for the using of each material into groups, just as is the case today.

I had spoken of this in our dental gatherings; I had ventured, very gently, into this field in lectures, but I was obliged to admit that all my work was purely empirical, and that my teaching was, therefore, quackery. But now, all this was gone. I felt that this, to me, new showing, as to the relative compatibility of the filling material with the tooth-bone explained everything—that my work was no longer empirical, but that my long and careful fifteen years' work was the practical demonstration of Dr. Palmer's scientific theorizing.

It was then that, with the president's suggestion that a motion to "pass" would be in order, I felt as though a spiral spring of power was between me and the seat beneath me, and I was up on a bound with:

"Pass it, Mr. President! Pass it! Why, sir, if this association was to vote its 'passing' unanimously, and it was joined by a like vote from every dental society upon the 'footstool,' it would all be as nothing! It would not pass! This subject is here to stay! It is the substratum upon which the saving of teeth by filling will increasedly be based. Dr. Palmer has given the science, and I have the statistics of years which will prove the practice. I join hands with Dr. Palmer, and together, shoulder to shoulder, we will fight this fight."

It was then that Dr. Palmer came to me, and with that emotion which could not be repressed, took my hand in both of his with, "Thank God for this, Dr. Flagg. You are the first man that has come to my side." To which I replied: "I am there, Palmer, and there I propose to stay." And in that moment the seed for the "new departure" was planted.

It can easily be imagined that this episode was quite as noticeable as much as that is faithfully reported, and, certainly, as much has come from that union as from almost any other known to dentistry, while this occasion indicates that, even now, the subject is not yet "passed."

Dentistry and Darwinism.

By EBEN M. FLAGG, D.D.S., Philadelphia, Pa.

Read before the Central Dental Association of Northern New Jersey, May, 1901.

While at the International Dental Congress, held in Chicago, in the year 1893, your essayist was much impressed by a paper read by the late Dr. Bonwill, of Philadelphia, to prove that the evolution doctrine of Charles Darwin was a delusion and a snare, and could be so proven by a proper study of the human denture. Dr. Bonwill spoke as follows:

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"Kindly give me your undivided and unprejudiced attention, and when you have gone to your homes and studied the whole subject as it deserves, you will find it worthy of some consideration as a truly scientific way of getting at an ultimatum by which evolution shall be decided to be as much of a fallacy as it has been an hypothesis."

As it is now seven years since I "went home and studied the subject," and have not yet decided that evolution is a "fallacy," I have the honor to present to you this evening a few considerations which still incline me to believe that the great doctrine which Darwin announced as the result of lifelong labor, receives very substantial support from the study of our specialty, and had philosophical men who were trained dentists taken part in the agitation which his doctrine produced, it would have been an easier matter to weaken the prejudice of the public, a prejudice, I may add, which is not yet wholly conquered.

**The Doctrine
of
Evolution.**

The doctrine of evolution teaches that organisms progress from simple to complex forms. That every form is but the modification of some preceding form. It does not deny retrogression, but claims that retrogression is in obedience to the same law; that the higher form cannot exist except as it comes or is evolved from the lower form. That out of nothing comes nothing, much less a universe. That those changes and modifications are so gradual that the utmost subtlety of science cannot detect the dividing line between the plant and the animal, between the animal and man. That no matter how refined and superior may be an organism, as illustrated in the case of man, there still exists ample testimony of the lower origin, showing clearly from whence the higher came. That this testimony is not entirely obliterated even where circumstances have produced a type that has endured for countless generations, and that even the highest type may be subject to atavisms or "throwbacks" that come as voices from the distant past, proclaiming "From such as we, have you arisen."

To the average observer, no proposition could seem more absurd than that the refined Caucasian man and woman had any relationship whatever with the animal. Should we doubt it, we would be treated to an enumeration of the great contrasts that could so easily be observed, and when the list had become very long the case would be considered as proven. Any one who ventured to claim that facts of relationship must be proven not by contrasts but by comparisons, and that the differences noticed in different types might be merely differences of degree, would be considered as one opposing his puny voice against an overwhelming mass of evidence. And such was the case when Darwin announced his doctrine of evolution to the world. The mass of ridicule and sneers

heaped upon him and his theories would have vanquished any one who was not sustained by the knowledge that he had labored for the welfare of his fellow man. He asserted positively that from the man to the child, from the child to the infant, and from the infant to the embryo, every step was in the direction of the animal.

Evidence from the Study of Teeth.	Let us see if dentistry has anything to offer in demonstration of this assertion.
	What are the characteristics of a front tooth of the highest animal with which we are acquainted, our intelligent dog or monkey, for example?

1st—It is opaque, or nearly so.

2d—It has one uniform color from neck to cutting edge.

3d—Among the various individuals of the species there is very little variety in that coloring.

4th—The surface of the animal's incisor is entirely devoid of the graceful undulations and curves that give so much beauty to the human tooth.

There is so little of modeling in the tooth of the animal that it would be difficult to tell which was the first, second or third incisor, and, except from attrition, decide which was the upper or lower; which was the right or left.

Let us now consider the characteristics of the adult human incisor.

1st—It is translucent, sometimes almost transparent.

2d—Its color varies in marked degree from neck to cutting edge.

3d—In different individuals the variety of color is so great that at least fifteen or twenty different shades can be distinguished by the expert dentist.

4th—The surface of the human incisor abounds in graceful undulations and curved lines, and all the teeth of the human adult have such a delicacy and perfection of modeling that, in a healthy mouth, each tooth is possessed of great individuality so that there need be no mistake which is right or left, upper or lower, first, second or third.

Now let us consider the adult human cuspid. There are certain points which distinguish it from the cuspid of the animal. The corresponding tooth in the animal is more worthy of the name of cuspid, for it is a mere point. It can puncture and seize. The adult human cuspid is something more than a mere point. It has a point and two cutting edges like a spear. It resembles the animal's in that it is longer, more powerful and has a more massive root than any other tooth in the denture, but these qualities are not necessary to the well being of the human species. Man as man does not require them for offensive or defensive purposes. These conditions which exist, even in the most advanced of the human race,

do not even add to the physical nourishment of the individual. Level the human cuspid to the dimensions of its neighbors, and as far as his physical well-being is concerned, man would hardly feel the loss.

Such is not the case, however, with any animal. Destroy the distinctive characteristics of the cuspid tooth in an animal, and you immediately reduce his ability to cope with his fellows, seize his prey or defend his family.

And, again, this adult cuspid tooth in human beings possesses another quality. Its color is different from that of any other tooth in the head, and in the distribution of that color the same rule does not apply to it that applies to any other tooth. All four of them are more yellow than any of the other teeth, and the yellow is continuous throughout the entire length of the crown. It does not shade and vary as is the case with other human teeth. In other words, in this respect it is like the cuspid of the animal. Where is the necessity for this? "Evolution" explains it by saying that it is a remnant of animal life that man has inherited, but where is the argument drawn from "Design" that can explain it? So important is this feature of the human cuspid to the beauty and expression of the denture, that the denture does not look natural without it, and a set of artificial teeth never can be made to have a natural expression when this feature is omitted. Even the beauty of the incisors is enhanced by the contrast, yet it is no more necessary to man that this should be so than it is for him to be provided with muscles to flap his ears, of which muscles he still has remnants.

Having now noticed how very little is distinctly animal in the adult human denture, I will invite your attention to the temporary denture of the child. Here the proofs of animal origin increase and multiply as might be expected, and though Darwin did not mention it, his doctrine implied it.

1st—There is less variety of color and more of uniformity and monotony in the distribution of that color, and such is the case with the animal denture.

2d—There is less translucency and transparency. This is also the case with the denture of the animal.

3d—In different individuals there is not the variety of coloring, as is the case with the permanent denture, and in this respect it also resembles the animal denture.

4th—With the exception of the second temporary molar, there is not the same variety of modeling that we see in the permanent denture. Another kind of resemblance to the animal.

5th—The temporary cuspid is not so spear-shaped as is the case

with the permanent cuspid, but is rounder; also, it slants slightly backward in many cases and interlocks with its antagonist like the cuspid of the animal.

6th—Its color is the same as that of the other teeth, as is the case with the denture of the animal.

7th—The first temporary molar has not the characteristics of any other tooth in the head, temporary or permanent, but bears strongly the appearance of the premolar of the animal. Its crown closes in from the gum margin, narrowing down to the triturating surface, and the enamel of the forward exterior cusp describes a sharp, bulging incline like unto those animals whose teeth are adapted to the crushing of bones, which is certainly not a necessary function of the child's denture, and cannot have its origin in "Design."

Let us now come to the subject of atavisms or throwbacks, and dental atavisms are not wanting. Atavisms may indicate progression or retrogression. When we observe the glimmering of a

superior quality, mental, moral or physical, suddenly making its appearance in an inferior man or animal, it is reasonable to infer that such a being has fallen, unless we can show that such a superior quality has been acquired through the immediate efforts of the one possessing it, and such atavisms have more than a philosophical value. They have often a moral value as indicating what it is desirable to cultivate in order to rise.

So, when we observe the sudden appearance in a superior being of a certain quality utterly incongruous with the general type of such an individual, so utterly incongruous in fact that we can only associate it with an organism so vastly inferior as to belong to another species, then "Evolution" teaches us that this being has not fallen, but has risen; that the observed phenomenon is an atavism or throwback, and this atavism, it seems to me, has also a moral significance as indicating to what a height humanity may rise, judging from what it has already risen.

Now, if we are not elevated animals, but are degenerated angels; if there has been a "fall of man," rather than a rise of man, it would be pleasant to see some physical atavisms indicating man's angelic origin. If some of us would sprout a pair of wings, for instance, it would give us perhaps important information about aerial locomotion, which we are so painfully struggling to accomplish, and when we wished to have intercourse with our fellow men of other nations, we would be able to avoid the custom house, which is also an atavism from the Mediterranean pirates, and which coils itself around our civilization so persistently as does the tailbone between our legs.

What sort of things angelic teeth may be, or might have been, we can only surmise. Most of us, no doubt, are quite satisfied with the kind that may be found within the lips of many of our young ladies, but when we come to dental atavisms there is nothing in them of the angelic, at least in anything that I have ever seen. To begin with, we will consider the supernumerary tooth, which I think we will have to admit is an evidence of atavism. Now as there are forty-four teeth in the higher mammalia as against thirty-two in man, it follows that man would require twelve supernumerary teeth in order to be numerically even with his remote ancestor, dentally speaking, and we never see that number in any mouth, but those that we do see all bear the marks strongly defined of reversion to the animal type which, as I have already indicated, will not revert to now, closing my paper with the consideration of an atavism that is remarkably well illustrated and pertains to the cuspid tooth.

The model which I pass around is not that of a chimpanzee, gorilla or South American cannibal, but of a refined young lady, the daughter of a Cabinet Minister. She is not a ferocious shrew, but a lady of remarkably gentle manners, yet if one were to read her temperament from the cuspids alone, it might be thought that it indicated quite as much of the tiger as of the human. Not only have the superior cuspids no trace whatever of the human, they have the same occlusion and diastema that belong to the animal. The lower cuspids on the lingual surface have a very slight resemblance at one point to the human cuspid. The writer has known the family of this young lady for more than fifteen years, and she is the only one whose mouth shows this peculiarity. There is also no evidence of prenatal influence as a factor in its production, and we can only regard it as another link in the grand chain forged by Darwin; a chain which cost him a lifetime of arduous toil to forge, and then extorted from him the final declaration that "man is descended from an animal who has pointed ears, is covered with hair, and furnished with a tail."

Aseptic Aids to Dental Practice.

By ALPHONSO IRWIN, D.D.S., Camden, N. J.

Read before the Southern Dental Society of New Jersey, March 20, 1901.

"Change is an external law of Nature." An intelligent and discriminating public, as well as thoughtful and scientifically trained professions, demand a radical and sweeping change in personal habits and office methods in daily dental practice. The change that is required is based on positive and exact knowledge. It is a change from careless, slipshod, disease-infecting methods, only too prevalent in some dental offices, to aseptic methods founded upon modern scientific discoveries in bacteriology and pathology.

The effects of asepsis are sometimes almost miraculous in preventing the spread of epidemics or curing diseased conditions of the human body. Tuberculosis, tetanus, smallpox, syphilis, scarlet fever, diphtheria, septicemia and other dread diseases, as well as influenza and pyorrhea alveolaris, can be communicated while a dentist is operating, and it behooves us to take every reasonable precaution to prevent such a calamity occurring to a patient. "Many bacteriologists and pathologists regard bacteria and allied organisms as the causes of all communicable diseases." It is therefore obligatory upon us to know that all the materials we use are absolutely free from bacteria or septic matter.

The study of bacteriology is enforced in the curriculum of our most advanced dental colleges. The growing importance of this subject in relation to dental pathology has necessitated certain modifications in the technique of nearly all dental operations. A clear knowledge of the practical details of bacterial life development has become essential for successful dental practice just as it has for other branches of surgery.

The graduate from the dental college of today is equipped with information that will not only enable him to correctly apply the most improved methods for preventing and combating bacterial action, and to develop an efficient system of antiseptic technique in connection with his practice, but he is also trained in the methods that will make it possible for him to study the bacterial factor which is the cause of diseased conditions in special cases arising in his practice.

Among other requirements the laboratory instruction includes thermal and chemical methods of disinfecting instruments and appliances, apparatus and modes of testing efficiency of sterilizers; also antisepsis and asepsis in dental surgery, preparation of dressings, instruments, operator, assistants and patients. The classification, life history, modes of

infection and pathological significance of all bacterial forms having distinct dental importance is studied in detail.

The dental degree of the twentieth century can be obtained from an up-to-date college only after passing an examination upon the subject of bacteriology.

The prominence given to bacteriology by the scientific minds of the day is calculated to startle and arouse the dental practitioner of twenty or even five years' experience, to the necessity for using strictly aseptic materials in his practice.

We have voiced the sentiment of the public, the professions and the college upon the question of asepsis, now let us consider the clinical use of aseptic aids to the practice of dentistry.

**Aseptic Aids
to
Dental Practice.**

We call it rubber dam. The patient calls it d—— rubber. The dentist is responsible for much profanity. The majority of our patrons are too polite to speak their minds outright, but if we could hear people think, the dentist would listen to some violent explosions.

The cold, slimy, offensively smelling rubber; the cutting, twisting, irritating ligature! What dentist would not dispense with their use altogether, if he could? However, there are many operations which we either can or should perform without the aid of the rubber dam. How shall we proceed?

The dental doily is a relic of a filthy regime. There are associated with it unpleasant thoughts of a heterogeneous mass of soiled family clothing; an untidy, ignorant washerwoman or Chinaman, who take it, and oftentimes launders it in districts where nearly all contagious diseases originate, from leprosy, smallpox, diphtheria, scarlet, typhoid, typhus or yellow fever, Asiatic cholera and so on through the whole category of loathsome diseases. Or, if you are fortunate enough to have your office linen washed at home by a trustworthy, cleanly servant, separately from all other soiled linen, in vessels set apart for that purpose, there yet remains the thought that they have been used repeatedly in other mouths.

We adopted undressed bleached muslin fresh from the store as a substitute for the napkin. We cut it up into squares and long, narrow strips, and thought how convenient and clean it was. We took pains to impress upon the minds of our patients that it was only used once and then thrown away. But is muslin aseptically clean? Let us see.

How long has the muslin laid upon the counter or shelves of the store? How much dust, including disease germs from the dried-up sputum of infected persons among the incoming and outgoing stream of customers in the store, has been deposited on and tangled up within the

meshes of the muslin? Why does the Board of Health of our large cities and elsewhere forbid spitting upon the floor in public places? Dry goods stores are surely public places.

What kind of clerks have handled the muslin? What kind of mill hands manufactured the muslin and prepared it for the merchant? Were they cleanly in their habits? Do we possess any assurance that they did not have any skin or infectious disease? Have they the slightest conception of aseptic conditions? Did the manufacturer trouble himself about these details? No, indeed. If the muslin has not been sterilized, what right have we to assert that it is clean?

Linon Finish	The aseptic dental napkins, six inches square,
Aseptic	and the strips two inches wide by fourteen inches
Dental Napkins.	long, known as the Flagg napkin, are the best aseptic
	aids in dental work yet produced as a substitute for
	the rubber dam. If you are familiar with Flagg's

method of napkining, their value is instantly recognized. You use them once and then throw them away.

We will first consider the commercial side of the question. The square napkins cost \$1.85 for 500, or less than two-fifths of one cent a piece. The laundryman charges two cents a piece, twenty to thirty cents per dozen, for washing napkins six inches square in this city. It is not difficult to understand that they are cheaper than laundering, while the cost of buying your supply of napkins clinches the argument that it is to your interest to use aseptic dental napkins because they are cheaper.

But the clinical value of the aseptic napkins, and the comfort and satisfaction your patients will feel, are the crowning arguments in favor of discarding the old and adopting the new aseptic aids in dental practice. Once you become used to them, you will wonder how you ever for a moment tolerated those repulsive relics of the past—the dental doily and the store muslin—while your patients look with keen satisfaction upon the clean, snow white aseptic napkins for their exclusive use.

Another valuable aid to the practice of dentistry is cotton in the form of aseptic dental absorbents, including cottonoid strips, dental rolls and non-absorbent dental rolls.

Good cotton is elastic, springy, does not pack and lie hard against the soft tissues of the mouth, but forms a soft, yielding cushion that has a "kindly" feel peculiarly grateful to the irritated, nervous condition of many patients in the dental chair.

When a supply of aseptic dental aids prepared from cotton were first secured, the comment was made: "They are just the thing that the dentist needs." No higher compliment can be paid to them.

The uses of the aseptic absorbent cotton in the practice of dentistry

are manifold. It takes the place of Japanese bibulous paper in each and every particular. You simply cut a strip across the felted cottonoid one-quarter of an inch wide, then pull a small piece off the strip the size you want, give it a roll between your thumb and finger, and you have an absorbent pellet that is made quickly and will answer the purpose better than bibulous paper.

If you desire to dry out a cavity, place a suitable roll around the decayed tooth, dry out the moisture with one more of these absorbent pellets, then if it is desired to relieve a toothache, saturate another pellet with your favorite toothache remedy, apply to the aching pulp, remove the surplus medicine with dry cottonoid, saturate a pellet of suitable size to fill the remainder of the cavity with either chloro-percha or sandarac varnish, preferably the former, and you have a temporary stopping that will answer every purpose, which is very quickly inserted and adapted to the walls of the cavity without causing pressure on the exposed pulp. When the chloroform evaporates, the cotton is surprisingly firm.

One of my patients with a chloro-percha saturated cotton stopping went off unexpectedly on a three months' tour to the West and California. When he returned home, the temporary stopping was just as good and pure as when it was inserted, although it was in a cavity in the distal surface of the second right inferior bicuspid containing an arsenical application. The tooth did not ache.

Again, in removing putrescent pulps and cleaning out root canals, the aseptic cottonoid is unrivalled. Wind a few fibers around a nerve broach in order to avoid forcing the septic contents of the canals into the apical space. Fresh wisps of cotton can be wound around the broach as needed, and when the cotton comes out of the nerve canals white, clean and odorless, you know that the putrescent pulp has been removed. Then for conveying peroxide of hydrogen, a germicide or any medicament up into slender or crooked root canals, the few threads of cottonoid have no equal.

It will carry anything from water to sulphuric acid in Callahan's method of root canal cleansing, and in Hay's nitro-hydrochloric acid or *aqua regia* treatment for opening crooked or constricted root canals. While twisted tightly into a rope and moistened with your favorite germicide or any root dressing, it makes an excellent temporary root filling easily inserted and removed when the tooth is filled permanently.

In using the rubber dam in the mouth of a patient, a cottonoid strip placed between the rubber and the lower lip is far superior to the napkin or muslin, and for the following reasons: It adapts itself more readily to the anatomy of the parts, and hence lies in position without being held by a strap or, indeed, any precaution

Cottonoid Strip
With
Rubber Dam.

for retaining it in place. It is soft, yielding, downy; consequently it has a more "kindly" feel to the tongue and lips. It absorbs surplus saliva, and yet it does not need to be so frequently changed, if it is necessary to change it at all; therefore the annoyance of being compelled to stop our work in order to move a wet napkin along or replace it with a new one is avoided. It supplants the saliva ejector in many instances, and it can be dispensed with altogether by substituting aseptic absorbent cotton, casting it aside as soon as it becomes full of saliva and renewing with fresh cotton.

The absorbent power of cottonoid and cotton rolls is astonishing, and when either is placed over the mouths of the ducts of Steno or the sub-maxillary and sublingual ducts, their aid is invaluable in crown and bridge work and other cases where it is impossible to apply the rubber dam.

Then consider the use of felted cottonoid strips in an opposite condition of the mouth. I recently had a patient of a nervo-bilious temperament whose facial appearance was indicative of a jaundiced liver, and the supply of saliva was deficient as well as the secretion of the bile. The napkin and muslin were eternally sticking to her lips. When the attempt was made to remove the napkin (for it is my rule to operate with a napkin or muslin intervening between the fingers and the lips and teeth), it adhered so tenaciously to the lip that it seemed as though the mucous membrane would be torn away. While by moistening the napkin thoroughly you can easily separate it from the lips, yet in a comparatively dry mouth this is not so easily or quickly done. Better by far, take a strip of cottonoid with the felted side in contact with the mucous membrane, and then there will be no adhesion.

The value of aseptic aids is best illustrated by cases in office practice, therefore typical cases are presented.

<p>A Case From Practice.</p>	<p>A lady accosted me in great alarm one day, and said she had awakened from her night's sleep several times with her mouth full of blood. She had also spit blood during the day time. She inquired, "Shall I make an appointment with you or consult my physician?" She was instructed to come to my office first. When her mouth was examined, it was found that she was suffering from the effects of interstitial gingivitis. The margins of the gums around certain teeth were so engorged with blood that profuse hemorrhage occurred, and this occasioned alarm. She also grit her teeth in her sleep, and had neuralgic pains in the maxillæ.</p>
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The teeth were scaled. The instant the scaler touched the gum between the left superior cuspid and the first bicuspid, the blood gushed out. The blood was absorbed by the cottonoid pellets as fast as it appeared.

Pellets of aseptic absorbent cotton were saturated with camphenol, full strength, and packed in the pockets between the teeth. The hemorrhage ceased almost immediately and scaling was resumed. The distal surface of the left superior cuspid root, and the mesial surface of the root of the first bicuspid, were roughened by a calcareous deposit to the depth of 6.35 millimeters. A similar condition existed between the bicuspid and between the molars in other parts of the mouth, but there were three pockets in particular, like the one described, from which the adjacent gum bled excessively.

During the operation, a glass full of water containing one drachm of camphenol was occasionally used to syringe out the pockets and wash out the mouth. Cottonoid strips protected the hand of the operator, absorbed the blood and surplus saliva, in addition to pellets of the same material conveying the soothing and styptic camphenol to the bleeding gums. One week later the patient declared she had not had a hemorrhage in the mouth, nor neuralgia in the teeth and maxillary bones, and had not grit her teeth since the operation.

Although this patient was only twenty-two years old, the four superior incisors were separated, twisted and projected to such an extent by the effects of interstitial gingivitis, that they had to be regulated. The right superior lateral you could have pulled out with your fingers, it was so loose.

The teeth having been scaled and treated, the four superior incisors were regulated, and it became necessary to place retaining bands upon them. An absorbent cottonoid strip was placed across the mouth. Then strips as long as the cottonoid is wide (three and one-half inches) were rolled into three thicknesses and placed, one outside of the arch between the lips and the alveolar process, and the other roll inside the incisors along the palatal surface. My hot air syringe was being repaired at the time, which obliged me to depend largely upon absorbent cotton for drying off the teeth and the gums. Small pellets of cottonoid were put in the V-shaped spaces between the teeth, which is an exceedingly helpful precaution in keeping teeth dry. The gold retaining bands, three in number, were cemented into position, one after another in the usual manner.

The work was done during twilight when seeping might have occurred unperceived, yet notwithstanding these drawbacks, one week afterwards when the security of the retaining fixtures was tested, they were found to be firmly cemented into position and were allowed to remain on the teeth.

This, certainly, was an unusual test, both of the absorbent properties of cottonoid, as well as its ability to retain moisture once absorbed, instead of some of the saliva being squeezed out upon the teeth. In this

patient the supply of saliva in the mouth was not only abundant under ordinary circumstances, but dental operations had the effect of increasing the flow of the secretion.

In crown and bridge work and pivoting teeth, it is advantageous to place the non-absorbent rolls nearest the part to be kept dry, which will act as a dam against the invasion of moisture, with the absorbent rolls behind to take up the surplus saliva. In placing pivot teeth and porcelain crowns with collars, also in filling teeth where the cavity extends beyond the gum margin, seeping can be prevented by cauterizing the contiguous gum with pure trichloroacetic acid, while the saliva can be most effectively excluded by plugging up the V-shaped spaces between the adjacent teeth with pellets of non-absorbent cotton.

Another illustration of the use of aseptic absorbents occurs where we have to fill a large cavity in the buccal surface of a lower third molar, which extends below the gum. The supply of saliva in the mouth of a certain gentleman was abundant under normal conditions. The mere thought of having dental work performed would excite an increased flow. Difficulty has always been experienced on this account in filling the lower teeth, where it was impossible to adjust the rubber dam.

In previous operations, one-eighth of a grain of sulphate of atropia had to be administered in order to check the flow of saliva. With the aid of cottonoid folded in three thicknesses three and one-half inches long, and held in position in the usual manner, the cavity was filled successfully, although three-fourths of it was under the gum.

Absorbent cottonoid pellets were used to dry out the cavity, and also to pack Flagg's submarine alloy into the cavity by the familiar method of tapping upon the amalgam with a cottonoid pellet held between the jaws of plugging pliers.

The sublingual space back of the front teeth was also packed full of absorbent cotton in addition to the roll placed around the left half of the inferior maxillary bone, which contributed in no small degree towards keeping the cavity dry. There was no gagging in consequence of the presence of the roll so far back in the mouth.

The use of aseptic cottonoid in ordinary amalgam work varies with the method of the operator.

Case 3. In filling a large cavity in a right superior bicuspid on the distal surface extending above the margin of the gum, and including a fish tail shaped extension on the grinding surface, made by the decaying of the sulcus of the bicuspid, the following course was pursued:

A platinoid matrix, size No. 30, was shaped and adjusted between the second bicuspid and first molar. At the cervical margin of the cavity,

the matrix was forced up tightly against the tooth by wedging small pledgets of cottonoid saturated with a thick chloro-percha solution into the V-shaped space between the matrix and the first molar tooth. I now practically had a four-walled cavity, and when tapping pieces of amalgam into position, I did not force the amalgam out of the distal surface when patting the pellets of alloy into the burred out sulcus of the bicuspid, but on the contrary condensed the filling against four solid walls.

The cavity was previously dried out with cottonoid pellets and the warm air syringe in the usual manner. A strip of aseptic cottonoid was laid across the mouth to catch the surplus amalgam, and to separate the hands and instruments from the lips and teeth of the patient.

Aseptic cotton rolls were placed along the outer and inner surfaces of the teeth and alveolar ridge, and the spaces between the adjoining teeth, both on the palatal and buccal sides, were plugged with cottonoid pellets. The latter point is important. Moisture is apt to seep down the free margins of the gums on to the work from the approximal spaces otherwise, and you wonder how it got there.

A similar case in practice in which the aseptic cottonoid was helpful, was in filling a left superior second bicuspid in which the cavity extended above the gum on the distal surface, thence across the grinding surface, obliterating the sulcus, and up on the mesial side to the margin of the gum, involving the distal, occlusal and mesial surfaces of the tooth.

Platinoid matrices were fitted and adjusted to the approximal surfaces, the cottonoid strip, aseptic rolls and pellets were used in the manner already described, and the tooth was filled with amalgam without difficulty. The flow of the saliva was profuse, but that from the duct of Steno near by was readily absorbed by the roll without wetting the filling.

In building up broken down crowns of teeth with amalgam in order to obtain a secure foundation for crowns, the help afforded by cotton absorbents adds materially to the stability of the operation.

My method of proceeding would be to make a platinoid collar as wide as the crown is long, that will readily slip over the broken tooth. This can be done in a few minutes' time by fitting a platinoid strip of No. 34 gauge around the broken tooth while the patient sits in the chair, marking the size of the collar after trying it on the tooth and soldering the strip up to that mark with eighteen carat gold solder.

Trim the collar so that it will fit the festoons of the gum around the tooth, and see that the opposite margin clears the bite of the occluding teeth. Place the collar on the broken tooth, burnish the platinoid close down to the margins of the cavity and pack pellets of cottonoid,

saturated with chloro-percha, in between the matrix and the remaining portions of the tooth until all the space is filled up and the collar is drawn up against the entire edge of the decayed tooth.

You now have a simple cavity to fill. In an hour's time, or at a future sitting, dislodge the cottonoid pellets, the collar will be loosened and you can easily remove it. Trim away and polish the amalgam and tooth into a suitable shape to hold a crown.

**Aseptic Cottonoid
for Separating.**

Rubber for wedging purposes is a device that would do credit to the officers of the Spanish inquisition. Its use in my office was abolished years ago.

If you want sufficient room to insert a filling upon the approximal surface of any tooth, remove the soft decay, wash out the cavity with camphenol, dry thoroughly and keep adjacent parts dry with aseptic rolls; pack cottonoid twisted tightly in rope form into the cavity until it is crammed so full that it will hold no more, taking care to secure the end of the rope between the teeth before the cavity is quite full, then saturate your cotton with thick chloro-percha. In from three to six days, you can fill the cavity. The tooth will not be sore, and your patient will declare "it did not hurt a bit."

If it is not possible to pursue the above course, take an aseptic linen finished napkin, cut a strip three-sixteenths of an inch wide across it, place it between the teeth you desire to separate and cut it off close to the teeth. The saliva will moisten it. It swells. The teeth spread apart. Instruct the patient to double the strip, or make a treble thickness so it will fit tightly in between the teeth. When this becomes loose, a thicker wedge can be inserted. The patient can do her own wedging at home before a looking glass, and at the next appointment the cavity can be filled. This patient will also inform you that she did not suffer any pain from the wedging.

**Absorbent Dental
Rolls for
Gold Filling.**

I have put as many as four gold fillings in the occlusal surfaces of third molars for a single patient, one after another, with the aid of aseptic dental rolls in the manner already indicated for amalgam fillings.

If you can fill simple cavities in the occlusal surface of the third molars with gold, by the assistance of aseptic cottonoid rolls, it follows you can fill similar cavities in the grinding surfaces of the other molars and bicuspid.

Furthermore, in gold work, they will enable you to dispense almost altogether with the administration of drugs for checking the flow of saliva, ligating or plugging the duct of Steno or the use of the saliva ejector, and the number of cavities that can be filled without the use of the rubber dam will be increased.

From my experience, the following conclusions are deduced:

First—The public, the profession and the colleges demand a radical and immediate change to “Aseptic Aids” by the dentist.

Second—If the dentist can save money, do better work and serve his clientele more acceptably, he should discard the old materials and adopt the new “Aseptic Aids.”

Third—The aseptic absorbent and non-absorbent rolls and other cotton preparations, including the aseptic dental and Flagg napkins, meet the requirements of dental practice better than anything yet produced.

Fourth—Aseptic rolls of cotton, properly adjusted, enable the operator to insert plastic fillings of all kinds in any part of any tooth more perfectly and with greater ease than by the old methods.

Fifth—Simple cavities of moderate size in the occlusal surfaces of molars and bicusps and some compound cavities can be properly filled with gold, with greater ease to the dentist and comfort to the patient, with the aid of the absorbent and non-absorbent aseptic cotton rolls.

Sixth—Aseptic cotton as a vehicle for conveying styptics, germicides and other medicines, as well as for compresses, temporary root filling, wedges, both between the teeth or against the gum, and temporary stoppings when saturated with thick chloro-percha, as well as a substitute for bibulous paper, is unequaled.





Central Dental Society of Northern New Jersey.

May Meeting.

The regular monthly meeting of the Central Dental Society of Northern New Jersey was held at Davis's Parlors, Newark, N. J., Monday, May 20, 1901.

On motion of Dr. Sanger the regular order of business was dispensed with.

The President then introduced Eben M. Flagg, D. D. S., of Philadelphia, who read a paper entitled "Dentistry and Darwinism."

Discussion on Dr. Flagg's Paper.

As I listened to the essay I said to myself that we certainly have some scientific men in our profession, and when the essayist told us about the young ladies' mouths, I felt glad to see that he descended to the plane of ordinary human beings!

Dr. Osmun.

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young ladies' mouths, I felt glad to see that he descended to the plane of ordinary human beings!

Dr. Sanger.

The paper interested me very much indeed; it brought to my mind something which I read long ago, which goes to prove that Darwin was not the first discoverer of the descent of man from the ape.

In Thibet, India, they have a religion, descended from Bramahism, which is known as Lamaism. It is a remarkable fact, noted by all historians, that all the great religions of the world have as their foundation a legend somewhat similar to that of the Christian religion. Lamaism has back of it a legend something like this:

They say that Thibet, prior to the advent of men, was inhabited by demons, a class of beings of supernatural origin, not human. That at one time there came into that country an intelligent ape, who took for his wife one of the females of the country. They retired into the wilderness, and there was born to them a number of children, so

many, in fact, that—well they got disgusted and gave up the job. (Laughter). The father went away; when he came back he was surprised to find that his progeny had increased to the number of five hundred, and they were on the verge of starvation, because nature had not provided food for this peculiar product of animal life. So this ape lifted up his voice and prayed to God, and through the intercession of his prayers, seven kinds of food was sent down and sown in the ground, and the various grains which we find now as the nourishing food of man were given. The race was nourished; they became like men, their tails fell off, and they were the originators of the human race. I simply give this little bit of history to show that the origin of man from the ape was anticipated thousands and thousands of years before Mr. Darwin lived, as a legend.

While this has no direct bearing on Dr. Flagg's paper, it seems to me of interest to all of us to know that we have a definite authority, so to speak, for the fact that we are descended from intelligent apes. (Laughter and applause).

Dr. Leroy,
New York. Dr. Flagg's paper is most interesting, and, I think, has some fundamental points that will go far towards creating a more general consideration of the subject of Darwinism. I have endeavored to study and follow Darwin; I have read a number of his works, and am very deeply impressed with his theory of evolution, and the facts brought out by Dr. Flagg tonight and the comparison made between the dentures of animals and human beings is very well introduced.

Dr. Luckey. This is the first time I have heard Dr. Flagg speak in probably twenty years. He is always interesting, always instructive. He always brings up something we are not thinking about. He is very much like that illustrious cousin of his from Swarthmore, Dr. J. Foster Flagg; he always brings out something that we can take home with us to think about. I do not think any of us can go home without turning this subject over again in our minds, and we can see clearly the line that he has drawn in the progression from the lower to the higher forms. It is not entirely new to us, yet it is a matter that is not part of our studies or our daily thoughts, and instead of taking up more time in trying to follow this out in my imperfect way, I can only say that, so far as I can see into the subject, everything that Dr. Flagg has said meets with my approbation, even to his final wind up, his quotation from Mr. Darwin, where he was obliged to admit that after all we have all descended from a progenitor who had pointed ears, hair on his body and a tail.

I suppose we have all read the *Descent of Man, and the Evolution of the Species*. While the essay was being read, two points of interest came to my mind, one ludicrous and the other the opposite. The ludicrous one was a recollection of when I was being examined, and my being asked why the teeth of mammals went up and punctured the palate. I could not answer it then, although I probably could now. The other point arose in my mind when the second model of the mouth was sent around the room, and the thought struck me how many of us from a cursory look at that mouth would think there was anything abnormal about it, and would deduce from it what the essayist did.

Now that has given me the thought that it would be a great thing if we could get a man like Andrew Carnegie, who would donate say \$50,000 to build a hall where we and other societies could meet, a certain proportion of the income to be devoted to scientific investigations for the use of the people in the way of dentistry. I believe it could be done, and that if the proper man could see Andrew Carnegie he would be willing to put his hand in his pocket for that purpose. He cannot always be giving libraries. This is not a new idea on my part; it occurred to me at our annual meeting, and I tried to get our silver-tongued orator, Dr. Sanger, to bring that point out. The newspaper men were here at that time. They always honor us with their presence, because at nearly all our meetings something occurs of interest to the general public. Indeed, that is what we dentists should be ready to do, work and labor for the general public. The more we do for the public the better the public will think of us, and they will be better able to differentiate between the cheap parlors and the honest, legitimate dentists who are working for the public good. I thank Dr. Flagg for coming here tonight and for reading that paper; I think it will do every one of us good, because we will give more thought to Darwinism and the *Evolution of the Species*, and more attention to it probably in our everyday practice than we have heretofore.

I want to say, Mr. President, to Dr. Meeker, that if he approaches Andrew Carnegie for anything like \$50,000 he will have to ask it for a dental library, or he does not know his man. Andrew Carnegie is a man with one idea, and a strong idea, too.

Dr. Meeker. He can't always be giving libraries!

I wish to say to the essayist of the evening that seeing his name on the programme was a very great pleasure to me.

Dr. Sanger.

Next to my Alma Mater, Dr. Flagg stands closest in the preparation which I was given to practice my profession. Always a generous man, he threw open his laboratory, his workshop, to any student of the college, and when I was a student, I was fortunate enough to avail myself of that opportunity. He taught me things about prosthetic dentistry that I have never seen in books, that I have never heard taught in any other place. That teaching bears its marks in my life, and I am trying to hand it down to the students who come under my hand and training. So I want to pay a tribute to this man who is always original, par excellence an artist, and who has done as much to make prosthodontia the artistic calling that it is as any man who now lives. (Loud applause).

I, too, wish to add a tribute to Dr. Flagg, and to speak of a letter which was sent to me by Dr. Meeker. Dr. Gaylord, of New Haven, saying that he regretted very much indeed that the meeting of the Connecticut State Dental Society commenced tomorrow morning, and that he could not be here tonight to hear Dr. Flagg's speech.

Gentlemen, I thank you very much for the kindly way in which this paper has been received. Dr. Flagg. I could hardly expect very much discussion of a paper of this kind. I have no doubt that nearly all of you have noticed in the human mouth, the mouth of the adult and the mouth of the child, the points that I have mentioned, although probably you have not thought of applying them to the Darwinian theory. I, myself, would not have thought of so applying them had it not been that I was set to thinking by the paper of our departed friend, Dr. Bonwill. Dr. Bonwill's methods, in the paper, which he read at Chicago in 1893, were almost entirely based on the deductive philosophy. He commenced with the postulate that there was a personal God, and from that deduced that the human jaw was founded on a triangle, and that any change from that could not be a change in the direction of progress, it must be from what was perfect to what was imperfect. The method that I have pursued in my short lecture to you, you will see, is not deductive at all, it is entirely inductive. It begins with examining observed phenomena, making comparisons from our observations, and continuing in the collection of data. What that data may lead to, whether it proves we descend from animals or angels, is immaterial. I believe it is the scientific method, the method that should be pursued, the method that, although it requires more labor, more patience, and its results do not seem so brilliant immediately, as deductive philosophy, is still the method which will lead us to

substantial results, not only for the benefit of ourselves but for the benefit of our patients, and it is the method I hope to recommend to all of you. Thank you, again. (Loud applause.)

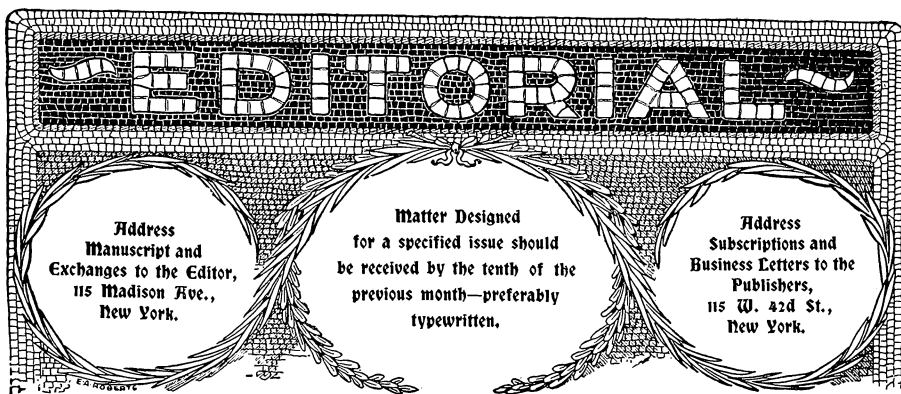
Southern Dental Society of New Jersey.

The Southern Dental Society of New Jersey held its June meeting in Camden, Wednesday evening, June 19. Several clinical demonstrations were given. Dr. De Trey demonstrated the "Use of Solila Gold." Dr. J. A. Waas, of Hammonton, N. J., "Pulp Mummification." Dr. J. E. Duffield, of Camden, "Painless Extirpation of the Dental Pulp," and Dr. C. P. Tuttle, of Camden, "Swaging Seamless Gold Crowns."

The banquet was the notable feature of the evening, and many hearty peals of laughter resulted from the numerous toasts and responses. Dr. O. E. Peck, of Bridgeton, N. J., Dr. Waas, Dr. J. G. Halsey, of Swedesboro; Dr. A. Irwin, of Camden, and Dr. E. N. Packard, of Atlantic City, responded enthusiastically to toasts called for by the worthy toastmaster, Dr. W. W. Crate, of Camden.

Steps were taken to stop illegal practitioners from practicing in the southern part of the State. Drs. J. F. Lummis, J. G. Halsey and J. B. Sharp were appointed delegates to the National Association, and Drs. K. Platt, E. E. Bower, C. Ironside, W. W. Crate, C. P. Tuttle and A. B. Dewees were appointed delegates to the State Society.

Several dental supply houses made exhibits.



Dental Association and Dental Associations.

Objects of Dental Association.

The young man just entering upon the practice of the profession of dentistry, may ask himself, "Why should I join a dental society? If anything of value transpires, I can read it in the journals." One object of this editorial is to answer that question of the young man; another is to make a plain statement to the older practitioners.

In the first place, then, replying to the young man, self respect, if nothing else, should urge all dentists to join at least their local societies. No man can long shirk his share of duty, receiving the benefits of the labor of others while contributing nothing, and command the respect of his fellows. If he win not the esteem of his neighbor, how can he respect himself?

The graduation exercises of the college are rightly termed the "commencement." The student with his diploma is fitted, not to practice dentistry, but merely to begin the practice of dentistry. He has at that time but received the fundamentals of his education. He has but a basis upon which to build. He must continue to be a student, or in the end admit himself and his life work to be a failure. He must learn by experience, and he will learn more rapidly if he take advantage of the experiences of others beside himself. This he can best do through association

with other men banded together with like object, viz., the exchange or interchange of experiences. It is true that the dental periodicals do much toward the distribution of knowledge, and are of estimable value to professional progress because they permanently record the newest thoughts and achievements. But it cannot be said that the journal takes the place of the society. A man reading an article in a magazine cannot rise and dispute with the author; if the argument is not quite intelligible he cannot ask for an elucidation; if there be some special feature of the described process which he does not grasp in his lonely corner as he sits under his reading lamp, he lacks the opportunity of having the knotty point unraveled.

If the dental magazines be closely observed, it will be noted that the great bulk of the matter comes originally from the dental society. Progress, therefore, however much aided by the publication, is nevertheless fostered by the executive committees of societies, who urge men to write and to discuss; who prepare attractive programs and obtain large attendance. This costs money, and those who are partaking of the feast, with no thought of the payment of the cook, are little less than parasites.

But there is, besides duty, a direct advantage to every man who becomes a member of a dental society. He makes acquaintances, and eventually friends among the higher class of men in his profession. And let it be said that there is no better advertisement for a truly professional man than to be well known and well spoken of by his confreres. A man's patients are sure to meet other dentists. Inevitably at some time they mention the name of their dentist, and they are little pleased to discover that they are clients of an unknown man. On the contrary, if the mention of the name elicits a hearty indorsement from the other dentist, the patient feels reassured in his choice.

For two or three years, in this city, a dentist has been on trial for his life on the charge of murder, having now faced three juries. It is noteworthy that during all that time there has been no concentrated effort on the part of other dentists to aid him. Why? He is a member of no society. Professionally he is a man alone.

To the older men it may be said that not sufficient effort is made to induce young men to enter society ranks. The membership committees in nearly all societies are almost the least active. They rarely initiate a

movement, but are satisfied to consider the credentials of those who voluntarily have their names proposed. This is not as it should be. Just as soon as a young man is licensed to practice, and elects to do so within the locality where a dental society exists, he should be approached by the Membership Committee with a proposition that he join the society. In this way not only would the ranks of the profession be recruited, but undoubtedly through the influences of society association, hundreds would be saved from the temptation of immediate employment offered by advertising parlors.

A young graduate from a most reputable college recently excused his taking a position with an advertising concern by the plea:

"I have to live."

He was astonished at the answer:

"No you do not! If when you undertook the study of dentistry, you did not see your way clear to live while at college and until you could earn a living along professional lines, you had no right to seek entrance into an honorable profession, which you now dishonor because of what you call the necessity of living. If you cannot make a living honorably in your profession, but must enter trade, then abandon your profession and be an honorable tradesman."

Turning to a consideration of the work of dental associations, it is noteworthy that almost every one of the July magazines gives up considerable space to the consideration of educational questions, the general trend of the arguments being that there is much to be expected from the two associations which specially devote themselves to this subject. Addressing ourselves first to the Faculties Association, a few quotations will not be out of place. In the *Digest*, Dr. J. G. Reid, in an admirable address to the Illinois State Society, is reported as calling attention to the fact that the Faculties Association is not preventing many abuses in the schools, and he asks:

"Will the N. A. D. F. continue the policy of backing up and recommending schools prepared to offer simply meagre mechanical discipline to students?"

In the discussion which followed, Dr. C. N. Johnson, himself a teacher, says:

"I am not willing to remain quiet longer and be classed as a member of the Faculties Association when it admits and retains some of the schools that are in it today."

In the *Dental Cosmos* there is a well considered article over the signature of Dr. W. H. Campbell, during the course of which he quotes a report of the Committee on Schools of the Faculties Association. This report enumerates many irregularities, rumors of which had reached the ears of the committee, but which could not be verified, and Dr. Campbell significantly adds, "because no investigation was made, as the committee further states in its report, because of lack of funds." There is now a standing resolution of this association providing funds for investigation of such rumors, and it will be interesting to hear what the committee will report this year, which has not been free from rumors, as will presently be shown.

In the *International* there are several papers treating of the general topic, in which occur criticism of our schools.

We have recently been in correspondence with a gentleman who has been connected with two or more schools, a gentleman of undoubted probity, enjoying an enviable national reputation, who severed his connection with one school because he could neither indorse nor prevent prevalent methods. In one place he writes as follows:

"While in the faculty I insisted on a strict observance of the rules and requirements of the Faculties Association, and also of the code of ethics. I always considered that the honor and advancement of the profession was of more importance than the money from several unqualified students. Hence, I was always thought to be in the way when their individual finances were in their minds, which seemed to me to be about all the time. Now that I am not in the way, I am inclined to think that the commercial value of a student is the principal qualification."

The full significance of this can only be comprehended when it is remembered that the writer has been in the faculty of the school of which he writes, a school still recognized by the Faculties Association.

In another letter, the doctor writes of dental education in language which may be pertinently quoted here. He says:

"The time has now arrived when the dental profession is capable of manning its own colleges. We have in the dental profession men who are amply qualified to fill all the chairs; that is to say, it is no longer necessary to have M. D.'s teach anatomy, physiology and oral surgery.

"I am one that always feels somewhat humiliated, when I see the names of M. D.'s mixed up among the teachers in the faculty of a dental college, because I know they have no interest in dentistry, and hold the position for what money there is in it; and what is worse, they cannot make any point out of anything that will be of any advantage to a dentist, where a practical dentist could call attention to many things of interest in dentistry, both in anatomy and physiology. In oral surgery the dentist ought to be the teacher. Students should never be advised in any way that all oral surgery cases should be relegated to an M. D. or general surgeon. The dental profession has had that kind of thing long enough, hence I am emphatically impressed with the idea that the time has arrived when the dental profession should take the advice once given to the Philistines: 'Acquit yourselves like men.' And I would add further that dentists should be men among men and do their own teaching and their own surgery, and it will be better done than it ever has been done.

"You will please permit me to say a few words in expression of my ideas of what the minimum preliminary education should consist of for admittance to a dental college.

"As the requirement now stands, my recollection is that the candidate for admission to a dental college must have an education sufficient to enter the second year of a high school, which, in my humble opinion, is entirely too indefinite; the writer is in favor of having the required studies specified; and a certain number of questions to be asked on each branch, with eighty per cent of correct answers required; and that these questions should not be limited to the branches usually taught in the common schools.

"We would require that they pass an examination in United States history, general history, advanced English grammar and rhetoric, physiology, geology, physics, algebra, geometry, Latin to include Cæsar, Cicero and Virgil.

"With such a minimum preliminary education, students will be prepared to understand the lectures, and will make much more rapid progress in all their studies. When men having the proper amount of preliminary education are graduated and enter a profession, they command the respect of all with whom they come in contact.

"The dentist should be, and the people have a right to expect the dentist to be, an intelligent man; one who can at least write an ordinary letter without violating the rules of grammar and the orthography of words in common use.

"Take the number graduated this year, 1901. How many of them, think you, will ever increase the respect of intelligent people for the profession? Who is to blame for this state of things? We answer, the col-

leges, very largely, if not altogether. They want and are bidding for students. They feel that they must have them. Being in the business for money, they take any one that offers, regardless of qualifications, if he or she has a hundred dollars. Students are known to have been matriculated without even being asked a single question in regard to their scholarship. Their money was taken, a matriculation card was given and their names enrolled, and all done to swell the list of students, and all done by men not engaged in the practice of dentistry. Is it not high time that the dental profession should demand that all who teach in dental colleges should be men engaged in the active practice of dentistry? What does an M. D. care for the honor, dignity and progress of the dental profession? He thinks dentistry is nothing but a trade to be classed with the barber or the shoemaker. When such men are in the college faculties, is it any wonder that all kinds of inducements are offered for students, especially when colleges are allowed to increase as they have been during the last few years? Will the profession allow this multiplication of colleges to continue? We await the verdict of the profession."

We do not wish to be understood as editorially attacking the dental colleges of this country, nor the Faculties Association. From personal knowledge it can be stated that many of our dental schools, in equipment and methods of teaching, rival the finest institutions of learning on this continent; also, we are personally cognizant of the fact that the Faculties Association as a body and through certain of its committees has made an earnest effort for the betterment of matters, with the result that much progress has been made. Yet it is this very improvement which most emphasizes the fact that the core of the evil remains untouched. The progress has been in the better schools, making them better than they were, and the lesser schools seem conspicuously less because of the comparison which is now more easily made. In justice to the schools that have improved their curricula, it is high time that the Faculties Association should show the courage to enforce its own rules. If there be no better method found, one is here suggested. Appoint a committee to investigate the standard of instruction maintained in schools known to be the best. Let all schools who maintain such standard be recognized as first class. If other schools must have recognition, list them as reputable, but second class. We have first and second class academic colleges. Is it reasonable to suppose that all the dental schools stand on a par, as recognition by the Faculties Association at present implies? Classify the colleges and inevit-

ably those in the second grade will either improve, or disband, an advantage in either event.

**National Association
of
Dental Examiners.**

The National Association of Dental Examiners is a curious body, which apparently accomplishes much less than it has the inherent possibility of doing. It is two years since this magazine exposed some of the strange occurrences in connection with the State Board of Illinois and the German-American College. All the data in our possession was turned over to a special committee of the National Association of Dental Examiners, which committee did absolutely nothing. One outcome of our publication, however, was to attract the attention of the authorities in Germany, with the result that American diplomas of all kinds are looked upon with suspicion, because of the practices of the German-American Dental College. We are now in possession of unimpeachable information to the effect that the German Government ordered an investigation through its Consul, which official reported that the Huxman and Weil schools are both disreputable. What, then, can be thought by the people of Germany when they see a circular issued by the German-American Dental College, of which the following is a translation in part:

“German-American Dental College,

“Chicago, June, 1901.

“Enclosed you will find a copy of a statement of the president of the Illinois State Board of Dental Examiners, of May 18, 1901. From it you will see, that after this public State Board had investigated all slanders of any kind, which emanated from creatures bought by the Dental College Trust (National Association of Dental Faculties), and after above Board had again inspected the German-American Dental College, its methods of instruction, management, buildings, etc., it unanimously decreed:

“First—To continue to put the German-American Dental College upon the same basis with all other reputable American dental colleges.

“Second—To recognize as heretofore its diplomas, as the Board declares, with emphasis, that the German-American Dental College has so far complied, and will continue to comply, with the regulations of the Illinois State Board of Dental Examiners, concerning reputable dental colleges.”

Fairfield, May 18, 1901.

"To whom it may concern:

"Be it known hereby that I, Homer W. Pittner, D.D.S., declare that I am a member and president of the Illinois Board of Dental Examiners, that I inspected in that capacity, with the members of the Board, the building, appointments, methods of instruction and graduating of the German-American Dental College of Chicago, and that said Board, after due deliberation, at its regular meeting in Chicago on May 3, 1901, resolved that the diplomas of graduates of the German-American Dental College of Chicago be recognized, and the holders thereof entitled to a license of the Board (Illinois State Board of Dental Examiners), to practice dentistry in the State of Illinois in the same way as graduates of any other reputable dental college.

"We believe in the sincerity of the German-American Dental College, that it complies with all the regulations prescribed by the Board, and therefore have 'unanimously' resolved to acknowledge its diplomas, and place this college upon the same basis with all 'reputable' colleges which comply with the regulations of the Illinois State Board of Dental Examiners.

"HOMER W. PITTNER, D.D.S.,

"President Illinois State Board of Dental Examiners."

After reading this indorsement of the Huxman School, the following is most significant. It is an extract from the official organ of the Central Association of (German) Dentists Graduated in America:

"The Southwestern Section of the Association of Dentists, graduated in America, practicing in Germany, in July, 1900, had addressed a petition to the Minister of Justice for protection against the granting of the title of 'Dr.' to a number of persons in the country, special mention being made herein of the reputable schools, members of the N. A. D. F., and such schools as Buchanan's, Abert's, Weil's, Huxman's, etc. Among other things, the Minister answers:

"The petitions for permission to bear the title of Doctor of Dental Surgery, or Doctor Chirurgiae Dentariae, acquired in America, based upon the Grand Ducal decree, which have reached this office, have been refused after a thorough examination, because under the circumstances, and after thorough official inquiries, it could not be established that a public and legitimate corporation, authorized in a similar way as a German university, under authority and recognition of the Government, had granted the diploma."

The attitude adopted by the Baden Government contrasts favorably with the brusquely declining attitude of Prussia in this question, and deserves to be thankfully mentioned. The attitude of the Baden government gives hint to the Central Association and the National Association of Dental Faculties and to the representatives of the American government, in what direction efforts must be made to win recognition for the title D. D. S. honestly acquired at scientific high schools in America. Our colleagues of the United States will now acknowledge, we hope, that there is only one way to win back the waning respect for the American D. D. S. title, and that is the proposition several times made on the other side—a National diploma guaranteed by the Federal government at Washington.

Energetic legal steps must be taken to revoke the charter of the German American Dental College, and all other inferior schools. In this way confidence in the granting of the American D.D.S. title would be restored, and the respect for the American colleges regained. No German government will then put in doubt the value of the title officially protected by the United States, or disregard an American diploma.

The second point touched upon by the minister's answer: "In reference to the Dr. title granted by inferior American schools, and against which your petition was directed, they cannot be considered academical honors in the sense of the government decree of September 14, 1899. Whoever adopts such a (Dr.) title is liable to punishment, according to Chap. 360, Sec. 8 of the penal code."

"Another point is that the Inspector of Police of Carlsruhe was instructed as follows: 'Ferdinand Miltenberger is not authorized to call himself plain Doctor, but only Doctor of Dental Surgery or D. D. S.'"

"As to the graduates of the German American Dental College, and the Cosmopolitan Post-Graduate School, it was decreed, that 'in the directory they cannot use the (Dr.) title in any form.'"

It may be asked, will be asked, in fact, "What can the Examiners Association do in this case?"

If the Illinois State Board is still a member of the National Association an explanation of this alleged indorsement could be demanded. If the German-American School is really reputable, it is high time that its reputation were established. There are some members of the Illinois Board of undoubted integrity, who would certainly aid the National Association in clearing up the stigma which rests upon the State because of this school.

In the first charges made against the school it was pointed out that there was undue connection between Huxman and at least one member of the Board. What will be thought of the rumor now current that Huxman

himself hopes to be appointed to the next vacancy on the Board? This through political influence.

In this connection the following course is suggested to the Examiners Association. We are informed that complaint has been made by the German Government to the Department of State against this and similar schools. If this be true, the matter takes on international significance. But the Secretary of State would be powerless to interfere in State affairs. Nevertheless if the National Association of Dental Examiners, representing the combined police interests in dental matters of many States, should forward a communication to the Secretary of State citing the facts, and asking that he represent officially to the Governor of Illinois that a foreign State complains of the German-American school, it is reasonable to suppose that the Governor would instigate a proper investigation of the school with a view to annulment of its charter should it be proved to be operated in a manner obnoxious to a Government whose citizens it invests with easily earned titles.





Questions will be answered in this department, provided the answers would be of general interest. After publication our readers are cordially invited to make further reply, criticism or comment.



In the last number, in the discussion of Dr. Greenbaum's paper on "Anæsthesia," Dr. Luckey is reported as recommending the use of the bromide of ethyl. In a communication from Dr. Luckey, we are informed that this was a mistake, and that he has never had any experience with the bromide of ethyl, consequently, however efficacious that drug may be, he naturally prefers not to stand sponsor for it. He states that all of his experiences have been with the chloride of ethyl. This was an error made by the stenographer, and one of which, as editor, we could have no cognizance. We take pleasure, however, in making the correction, as requested by Dr. Luckey.

**Vacuum
Chambers
Unnecessary.**

Dr. S. Lever, Sydney, New South Wales, makes the following communication in regard to vacuum chambers:

"In the various articles in the January ITEMS OF INTEREST on 'Vacuum Chambers,' an important feature appears to have been overlooked.

"It is generally admitted that undercuts, grooves and spaces, such as vacuum chambers, afford lodgment for food and secretions which

become more or less offensive after a little time, no matter how often the brush is used, and to many people it is not convenient, except at night and morning, to thoroughly cleanse their dentures.

"Thanks to Dr. Haskell, I have not used a suction chamber, as it is usually understood, for nine or ten years, and find that by relieving the hard parts and slightly scraping the soft parts I have gotten over the difficulty of a rocking plate, which was not always so when I relied on suction chambers.

"Also, the mucous membrane eventually fills up the chambers when they become practically useless, and often develop chronic sore mouth.

"To sum the matter up, I find that I can get more satisfaction by relief and scraping than by the use of the vacuum chamber only, obtain a more uniform plate under the circumstances in vulcanite work or avoid the projection in gold, and leave the denture in the best condition for cleansing.

"I omitted to add that when a vulcanite plate having a very deep, well defined chamber is worn, is it not likely to be the source of that chronic headache so prevalent among many people?

"I had a case in point recently which was certainly improved after I made a new plate without a chamber."

Vacuum Chambers Necessary.	Dr. Ralph R. Rathbone, of Dillon, Mont., sends the following contribution to the subject of vacuum chambers:
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"In reply to this question, it may be well to say that it depends entirely upon the alveolar ridge and the condition of the palate of each individual case to be treated.

"It is impossible to 'relieve' the pressure in any part of the palate (by scraping the impression) to equal the pressure in the other parts, as there is no way of actually ascertaining the exact pressure exerted in all parts of the ridge and palate at the same time. The tissues on one side may be firmer and harder than on the opposite, due, perhaps, to the fact that the teeth on that particular side have been extracted a longer period.

"Again, the thickness of the tissues covering the alveolar ridge on one side may be thicker than on the other, thereby making a more spongy bed for the denture to rest upon than a thinner covering, which would not offer as much resistance when pressure was exerted on the plate.

"The membrane covering the arch and ridge is not of an equal thickness or firmness; therefore, adhesion cannot be perfect in all parts.

An air chamber placed in the proper place in the plate will add to the adhesion, and relieve the pressure in the center of the palate.

"Dr. Parker states in his article that the parties who were with him and wore plates, noticed they felt firmer in their mouths at an elevation of five thousand feet than at sea level. That convinced him that a plate was held in by adhesion.

"Last summer, in crossing the Rocky Mountains between Montana and Idaho, at an elevation of eight thousand feet, one of my party found it difficult for her to retain the upper plate. That fact makes me believe that the plate was not held in place by adhesion, but by suction or atmospheric pressure.

"I have made dentures by the Haskell method, and by using an air chamber, the ones with the air chamber giving better satisfaction than those without.

"It is my opinion that the air chamber is necessary."

The following communication has been received from Dr. A. W. Jackson, of Milledgeville, Ga.:

**Official Dentists
in Georgia.**

The paper "Dental Gems from Paris," in February *ITEMS*, on page 122, says:

"Where is the hospital, sanitarium, infirmary, dispensary, insane asylum, home, college, or public school that has a dentist appointed on its staff of officers?...

"It gives me pleasure to say that Georgia State Sanitarium for the Insane located here has a dentist regularly elected and appointed on the medical staff of that institution."

Mr. D. W. Craig, long associated with the local societies of this state as stenographic reporter, furnishes the following most interesting communication:

**First Production
of
Dental Porcelain.**

"Almost every daily paper in the city of New York noticed at some length the death, a few weeks ago, of Louis Beckers, a chemist and traveler of some renown, whose body was, in accordance with his request, incinerated and the ashes consigned to the waters of the bay; but one important service which Mr. Beckers rendered to mankind was not mentioned, viz., the invention of the process of making the porcelain artificial teeth now used in dentistry. His twin brother, Alexander Beckers, relates the following:

"It was in 1838, in Philadelphia, that a dentist named Stockton, a relative of Edward White, who was the predecessor of S. S. White in the dental goods business, conceived the idea of manufacturing artificial teeth. He engaged a porcelain painter named Behringer to

color the teeth, and a German named Soerman to model them. After a great number of experiments and tests they found it impossible to make an artificial tooth that would stand the heat of the blow-pipe without cracking, and they were obliged to abandon the plan. Behringer, who was my room-mate at that time, seeing that they were unable to accomplish the object, was in despair and on the brink of committing suicide. To console him I said that I had a brother who was a chemist, and I would ask him if he knew of or could make a porcelain compound that would withstand the heat of the blow-pipe. It thus came about that my brother took the matter in hand and, after weeks of experimenting, succeeded in producing a porcelain compound which would not crack when subjected to the most intense heat. This compound, invented in 1838 by Louis Beckers, is today used in the manufacture of artificial teeth. The extent of the business then started may be estimated from the fact that a single order of nine million porcelain teeth was lately filled for the city of St. Petersburg alone."





M. C. McNamara.

Dr. M. C. McNamara, an old resident of St. Louis, died June 16, 1901, at Alexian Brothers' Hospital of paralysis. In his prime he was one of the most successful dentists, having at one time an income of not less than \$20,000 a year. The St. Louis Dental Society held a special meeting at Dr. Conrad's office, 3666 Olive street, on June 17. After several short addresses by a number of the members, the following were chosen to act as pallbearers: O. H. Manhard, William Conrad, Walter M. Bartlett, John H. Kennerly, B. L. Thorpe, P. H. Eisloffel, John G. Harper, Abel J. Prosser and A. Tschirner. A committee was appointed to draft a biographical sketch of the deceased. The following is their report:

"Dr. M. C. McNamara was born in 1829, in Ontario, Canada, of Irish parentage. He engaged in mercantile pursuits there in his earlier years, and there married Miss Katherine Aquesta Martin, fourth daughter of William Francis Martin, a civil engineer in the employ of the British Government. Also was a member of the Council in London, Canada. Dr. McNamara in 1863 removed to Philadelphia, and a year later came to St. Louis.

"Soon after his arrival here Dr. McNamara was graduated from the old St. Louis Dental College, and began the practice of dentistry. Later he occupied a chair in the College.

"In 1896 Dr. McNamara lost his wife, and since then has taken little part in active business. He was a member of the Knights of St. Patrick, and of a number of charitable and Catholic religious organizations. He was a former President of the St. Louis Dental Society, a member of the Odontological Society, of St. Louis, and Missouri State Dental Association.

"Dr. McNamara had a family of seven sons and two daughters. The survivors are four sons—Joseph T., John J., William F., and Edward J., and two daughters, Miss Frances K. McNamara and Mrs. F. L. Linton.

"Dr. McNamara was an all-round dentist and took great pride in making his operations as near perfect as possible. He was ethical in every sense of the word. For a number of years he insisted on enter-

taining the St. Louis Dental Society at its annual meetings for the election of officers. These meetings were held at his spacious residence; after the business of the session was disposed of an elegant spread was partaken of in the dining room.

"Personally, Dr. McNamara was a fine specimen of an Irish gentleman and generous to a fault.

"Having been long connected with the Jesuit Church at Ninth and Washington avenue, by special permit he was buried from St. Francis Xavier Church, Grand and Lindell Boulevard, Rev. Father Daniel McErlane, S.J., officiating, and was interred in Calvary Cemetery, Tuesday, June 18, 1901.

"JOHN G. HARPER,

"WILLIAM N. CONRAD,

"ADAM FLICKENGER,

"Committee."

CORRESPONDENCE

Chloretoe.

Editor ITEMS OF INTEREST:

We have, of course, read with a great deal of interest the various articles on pages 496, 497, 518 and 534 of *ITEMS OF INTEREST* for July 1901. Naturally, we are especially gratified to observe the statement made by such an excellent dentist as Dr. George W. West, of Chicago. While we are extremely sorry to read the opinion of chloretoe expressed by L. Greenbaum, M.D., D.D.S., of Philadelphia, on page 518, we realize that your paramount duty is to the readers of your periodical, and we neither expect nor ask that any editor shall suppress the facts out of a mistaken regard for our interests. We have a far greater stake in learning the real and exact truth about chloretoe than has any member of the dental profession. We have no desire in the world, nor would it be sound policy, to exaggerate the therapeutic usefulness of chloretoe. All we ask is that we be spared the injustice involved in such hasty and ill-advised communications as that of Dr. Franklin B. Clemmer, of Morgan Park, Ill., whose report on chloretoe appeared in your pages some time ago. Dr. Clemmer hurried his communication into print without stopping to

ascertain that the solution prepared for by his druggist contained 40 per cent alcohol! Now, we consider it a mistake to have any alcohol whatever in the solution, and we are seizing every opportunity to impress this fact upon our representatives and through them upon the members of the dental profession. There is no doubt that chloretone is doing good work in the hands of a great many dentists who know how to prepare their solutions, and who are not laboring under an exaggerated notion of what the drug will accomplish.

Permit us to direct your attention to the two formulæ here given:

1. Aqueous solution of chloretone (1 per cent) for hypodermatic injection:

Chloretone crystals.....4½ grains (.291 Gm.)

Lukewarm water.....1 fl. oz. (29.57 Cc.)

Shake the mixture until the crystals are entirely dissolved. As this solution cools, a portion of the chloretone will be deposited, but it will redissolve whenever the temperature of the solution is raised to about 98.6 degrees F.

Inject slowly, and wait about five minutes before proceeding to extract.

2. Ethereal solution of chloretone for use as an obtundent of sensitive dentine, painful gums, exposed pulp, etc.

Chloretone.....100 grains (6.48 Gm.)

Sulphuric ether.....1½ fl. drs. (5.53 Cc.)

Saturate pledgets of cotton with this solution, and apply to the painful area.

Do not inject hypodermatically.

They have been evolved from much practical experience, and will, we believe, give satisfaction.

As a local anesthetic we have been told repeatedly by competent dentists that a saturated solution of chloretone produces a local anesthesia as great as that which follows the injection of a 2 per cent solution of cocaine. It must, however, be here taken into account that there is no local anesthetic—not even cocaine—which does not at times disappoint the user, especially when the drug is employed for extraction. For chloretone we do not claim more than that it is a mild local anesthetic, that it is wholly free from danger to the heart or the central nervous system, and that it possesses considerable antiseptic power. An advantage in the use of the chloretone solution is that, unlike the cocaine solution, it does not become infected.

PARKE, DAVIS & Co.



National Society Meetings.

National Dental Association, Milwaukee, Wis., August 6.

National Association of Dental Examiners, Milwaukee, Wis., August 2.

National Association of Dental Faculties, Milwaukee, Wis., August 1.

State Society Meetings.

District of Columbia Dental Society, Washington, December.

Mississippi Dental Association, Yazoo City, August 1, 2, 3.

Ohio State Dental Society, Columbus, December 3, 4, 5.

Virginia State Dental Association, Natural Bridge, August 1, 2, 3.

West Virginia State Dental Society, Mannington, August 29, 30.

The American Society of Orthodontists.

At the first annual meeting of The American Society of Orthodontists, held in St. Louis, Mo., the following officers were elected:

President, Edward H. Angle, St. Louis; vice-president, William J. Brady, Iowa City; secretary-treasurer, Milton T. Watson, Detroit.

Board of Censors, Richard Summa, St. Louis; Henry E. Lindas, Great Bend, Kan.; William Ernest Walker, New Orleans.

Detroit, Mich.

MILTON T. WATSON, Sec'y.

Northern Iowa Dental Society.

The seventh annual meeting of the Northern Iowa Dental Society will be held at Arnold's Park, Lake Okoboji, September 3, 4 and 5. Hotel rates, \$2.00 per day and ladies free.

WILLIAM FINN, Sec'y.

Cedar Rapids, Iowa.

Mexican Dental Society.

In the meeting held by the Mexican Dental Society on Thursday, June 27, there were elected as Governing Board the following: President, Ricardo Crombe; first secretary, Ricardo Figueroa; second secretary, Jose J. Rojo; treasurer, Alfredo Reguera.

RICARDO FIGUEROA, First Sec'y.

City of Mexico, Mex.

Texas State Dental Association.

The Texas State Dental Association met at Sherman, May 14, 15 and 16, 1901, with a good attendance, and a splendid meeting resulted.

Waco was selected as place for meeting 1902.

The following officers were elected:

President, H. L. Pearson, McKinney; first vice-president, J. G. Fife, Dallas; second vice-president, Thomas P. Williams, Houston; secretary and treasurer, Bush Jones, Dallas; curator of museum, A. F. Sontag, Waco.

Executive Committee, Sam G. Duff, chairman, Greenville; E. F. Comegys, Gainesville; W. R. Rathbone, Cuero.

Dallas, Texas.

BUSH JONES, Sec'y.